Inventor Search

10/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014596391
WPI Acc No: 2002-417095/200244
XRPX Acc No: N02-328238

Photorefractive **treatment developing method for** photorefractive **surgery, involves adjusting prospective treatment based on induced deviations, to develop treatment which compensates the induced deviations**

the patent

Patent Assignee: BAUSCH & LOMB INC (BAUL)
Inventor: **COX I G ; TURNER T N ; YOUSSEFI G**
Number of Countries: 097 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200234178	A1	20020502	WO 2001US31823	A	20011012	200244	B
US 20020082629	A1	20020627	US 2000241869	A	20001020	200245	
			US 200145694	A	20011019		
AU 200213126	A	20020506	AU 200213126	A	20011012	200257	

Priority Applications (No Type Date): US 2000241869 P 20001020; US 200145694 A 20011019
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200234178	A1	E	19	A61F-009/01	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

US 20020082629	A1	A61B-018/20	Provisional application US 2000241869	
AU 200213126	A	A61F-009/01	Based on patent WO 200234178	

Abstract (Basic): WO 200234178 A1

NOVELTY - A prospective **photorefractive** treatment is adjusted for a higher order or a lower order aberration, based upon a biomechanically or biodynamically induced deviation from the expected result for developing a treatment which compensates the biodynamically and biomedically induced deviation.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) Higher order aberration correction method;
(2) Regression effect lessening method; and
(3) Refractive surgery system.

USE - E.g. **photorefractive** surgery, for correcting higher order aberration in consideration of biodynamical or biomechanical responses of the **eye** .

ADVANTAGE - Provides better objective and subjective evaluation of the **eye** . Enables modeling of **eye** for adjusting a treatment procedure for **vision** correction. Provides non-limiting benefit by removing the effects of **eye** rotation that occurs when a patient changes from a sitting to a supine position.

pp; 19 DwgNo 0/0

Title Terms: TREAT; DEVELOP; METHOD; SURGICAL; ADJUST; PROSPECTING; TREAT; BASED; INDUCE; DEVIATE; DEVELOP; TREAT; COMPENSATE; INDUCE; DEVIATE

Derwent Class: P31; P32; S05
International Patent Class (Main): A61B-018/20; A61F-009/01
International Patent Class (Additional): A61F-009/08
File Segment: EPI; EngPI

10/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014111814 **Image available**
WPI Acc No: 2001-596026/200167
Related WPI Acc No: 2001-615950
XRPX Acc No: N01-444280

Laser beam spatial intensity profile for refractive laser ablation system used in eye surgery, has flat portion extending for larger percentage of profile and rounded edge extending for small percentage of profile

Patent Assignee: TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME (CHIR)
Inventor: HOHLA K; TOENNIES R G N; **YOUSSEFI G** ; TOENNIES R G
Number of Countries: 095 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200128478	A2	20010426	WO 2000EP10379	A	20001020	200167	B
AU 200111427	A	20010430	AU 200111427	A	20001020	200167	
DE 10014482	A1	20010927	DE 1014482	A	20000323	200167	
DE 19950788	A1	20010517	DE 1050788	A	19991021	200167	
EP 1221921	A2	20020717	EP 2000972834	A	20001020	200254	
			WO 2000EP10379	A	20001020		
BR 200015064	A	20020716	BR 200015064	A	20001020	200255	
			WO 2000EP10379	A	20001020		
KR 2002053071	A	20020704	KR 2002705105	A	20020420	200302	

Priority Applications (No Type Date): DE 1014482 A 20000323; DE 1050788 A 19991021; DE 1014400 A 20000323
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200128478	A2	E	33	A61F-009/01	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
AU 200111427	A			A61F-009/01	Based on patent WO 200128478
DE 10014482	A1			A61F-009/008	
DE 19950788	A1			A61F-009/008	
EP 1221921	A2	E		A61F-009/01	Based on patent WO 200128478
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
BR 200015064	A			A61F-009/01	Based on patent WO 200128478
KR 2002053071	A			A61F-009/01	

Abstract (Basic): WO 200128478 A2

NOVELTY - The laser beam spatial intensity profile comprises a flat portion extending for a larger percentage of the profile and symmetric about radius of profile. A rounded edge continuous with the flat portion, is extended for a smaller percentage of the profile, until

ablation intensity threshold is reached. The beam suitable for ablating **eye** tissue is projected to **eye** through the rounded edge.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) Laser system;

(b) Aperture card for use in **photorefractive** laser system;

(c) Method for providing laser beam

USE - For refractive laser ablation systems and excimer laser ablation system used in **eye** surgery.

ADVANTAGE - Reduces the stair-step effect of typical ablation with square-sided ablation profile. Flat top assists in steepening ablation sides, hence haze that results from square profile ablations are reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the laser refractive ablation system.

pp; 33 DwgNo 1/14

Title Terms: LASER; BEAM; SPACE; INTENSITY; PROFILE; REFRACT; LASER; ABLATE ; SYSTEM; **EYE** ; SURGICAL; FLAT; PORTION; EXTEND; LARGER; PERCENTAGE; PROFILE; ROUND; EDGE; EXTEND; PERCENTAGE; PROFILE

Derwent Class: P32; S05; V08

International Patent Class (Main): A61F-009/008; A61F-009/01

File Segment: EPI; EngPI

10/5/3 (Item 3 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

00795304 **Image available**

MULTI-STEP LASER CORRECTION OF OPHTHALMIC REFRACTIVE ERRORS

CORRECTION PAR ETAPES SUCCESSIVES DES DEFAUTS DE REFRACTION OPHTALMIQUES AU MOYEN D'UN LASER

Patent Applicant/Assignee:

TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME, Max-Planck-Strasse 6, 85609 Dornach, DE, DE (Residence), DE (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

HOHLA Kristian, Johann-Strauss-Strasse 15, 85591 Vaterstetten, DE, DE (Residence), DE (Nationality), (Designated only for: US)

YOUSSEFI Gerhard , Reichardtstrasse 1, 84028 Landshut, DE, DE (Residence), DE (Nationality), (Designated only for: US

Legal Representative:

VOSSIUS & PARTNER (agent), Siebertstrasse 4, 81675 Munchen, DE,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200128477 A1 20010426 (WO 0128477)

Application: WO 2000EP10377 20001020 (PCT/WO EP0010377)

Priority Application: DE 19950789 19991021; DE 10014481 20000323

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: A61F-009/01

Publication Language: English

Filing Language: English
Fulltext Availability:
  Detailed Description
  Claims
Fulltext Word Count: 6635

English Abstract
  A technique of refractive **eye** correction employs multiple steps to correct refractive errors in the **eye** . In the first step, gross decentrations of the refractive error are corrected, allowing the subsequent steps to be relatively symmetric in their treatment profile. Then, the **eye** 's refractive error is again measured, and a subsequent treatment is applied for the remaining error. The overall treatment is thus completed in two or more steps.

Legal Status (Type, Date, Text)
Publication 20010426 A1 With international search report.
Publication 20010426 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
Examination 20010907 Request for preliminary examination prior to end of 19th month from priority date

10/5/4 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00795303 **Image available**
IRIS RECOGNITION AND TRACKING FOR OPTICAL TREATMENT
RECONNAISSANCE ET SUIVI DE L'IRIS EN VUE D'UN TRAITEMENT OPTIQUE
Patent Applicant/Assignee:
  TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME, Max-Planck-Strasse 6, 85609 Dornach, DE, DE (Residence), DE (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
  HOHLA Kristian, Johann-Strauss-Strasse 15, 85591 Vaterstetten, DE, DE (Residence), DE (Nationality), (Designated only for: US)
  NEUHANN Thomas, Herzogstrasse 48, 80803 Munchen, DE, DE (Residence), DE (Nationality), (Designated only for: US)
  YOUSSEFI Gerhard , Reichardtstrasse 1, 84028 Landshut, DE, DE (Residence), DE (Nationality), (Designated only for: US)
  TOENNIES Roland Gunter Norbert, Neufeldstrasse 55, 82110 Olching, DE, DE (Residence), DE (Nationality), (Designated only for: US
Legal Representative:
  VOSSIUS & PARTNER (agent), Siebertstrasse 4, 81675 Munchen, DE,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200128476 A1 20010426 (WO 0128476)
  Application: WO 2000EP10373 20001020 (PCT/WO EP0010373)
  Priority Application: DE 19950791 19991021; DE 19950790 19991021; DE 10014479 20000323
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
  (OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61F-009/01
International Patent Class: A61B-003/103
Publication Language: English
Filing Language: English

English Abstract
A system and method are provided in which an iris or **eye** image is taken during a refractive diagnostic analysis. The image is employed for aligning data from the analysis with data from other refractive analysis instruments, as well as aligning a refractive surgical tool, such as a laser, with the **eye** for treatment. Further, the stored iris image is compared with the patient's iris before treatment, verifying that the correct **eye** is to be treated with a developed treatment pattern. A variety of refractive instruments can be used, such as corneal topography systems and wavefront aberration systems.

Legal Status (Type, Date, Text)
Publication 20010426 A1 With international search report.
Publication 20010426 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
Examination 20010907 Request for preliminary examination prior to end of 19th month from priority date
Correction 20020919 Corrected version of Pamphlet: pages 1/15-15/15, drawings, replaced by new pages 1/15-15/15; due to late transmittal by the receiving Office
Republication 20020919 A1 With international search report.

10/5/5 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00795243 **Image available**
CUSTOMIZED CORNEAL PROFILING
ETABLISSEMENT D'UN PROFIL CORNEEN INDIVIDUALISE
Patent Applicant/Assignee:
TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME, Max-Planck-Strasse 6, 85609 Dornach, DE, DE (Residence), DE (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
HOHLA Kristian, Johann-Strauss-Strasse 15, 85591 Vaterstetten, DE, DE (Residence), DE (Nationality), (Designated only for: US)
YOUSSEFI Gerhard , Reichardtstrasse 1, 84028 Landshut, DE, DE (Residence), DE (Nationality), (Designated only for: US)
BROADUS Charles R, 16332 110th Avenue, N.E., Bothell, WA 98011, US, US (Residence), US (Nationality), (Designated only for: US)
TURNER Timothy N , 2558 West 6830 South, West Jordan, UT 84084, US, US (Residence), US (Nationality), (Designated only for: US
Legal Representative:
VOSSIUS & PARTNER (agent), Siebertstrasse 4, 81675 Munchen, DE,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200128410 A1 20010426 (WO 0128410)
Application: WO 2000EP10375 20001020 (PCT/WO EP0010375)
Priority Application: DE 19950790 19991021; DE 10014480 20000323

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ
DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG
SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61B-003/107
Publication Language: English
Filing Language: English

English Abstract
A customized corneal profile is provided by combining corneal topography data with captured wavefront aberration data to form a course of refractive treatment of the **eye** . In one embodiment, the captured wavefront data is employed within the area of a pupil, while the corneal topography data is employed in the area outside of the pupil. In other embodiments, the topography data is adjusted based on the wavefront data, a course of refractive treatment is simulated and displayed upon the topography data, and an initial evaluation of the suitability of a patient for treatment is performed based on the topography data.

Legal Status (Type, Date, Text)
Publication 20010426 A1 With international search report.
Publication 20010426 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

10/5/6 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00795241 **Image available**
WAVEFRONT SENSOR HAVING MULTI-POWER BEAM MODES, INDEPENDENT ADJUSTMENT CAMERA, AND ACCOMMODATION RANGE MEASUREMENT
CAPTEUR DE FRONT D'ONDE DOTE DE MULTIPLES MODES D'ALIMENTATION DE FAISCEAUX, D'UNE CAMERA D'AJUSTEMENT INDEPENDANTE ET DE MESURE DE GAMME D'ACCOMMODATION
Patent Applicant/Assignee:
TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME, Max-Planck-Strasse 6, 85609 Dornach, DE, DE (Residence), DE (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
YOUSSEFI Gerhard , Reichardtstrasse 1, 84028 Landshut, DE, DE (Residence), DE (Nationality), (Designated only for: US)
POLLAND Joachim, Heiglstrasse 19, 82515 Wolfratshausen, DE, DE (Residence), DE (Nationality), (Designated only for: US)
SAPPEL Christoph, Breitensteinstrasse 7, 82031 Gruenwald, DE, DE (Residence), DE (Nationality), (Designated only for: US
Legal Representative:
VOSSIUS & PARTNER (agent), Siebertstrasse 4, 81675 Munchen, DE,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200128408 A2-A3 20010426 (WO 0128408)
Application: WO 2000EP10372 20001020 (PCT/WO EP0010372)
Priority Application: DE 19950792 19991021; DE 10014400 20000323

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ
DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG
SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: A61B-003/103
International Patent Class: A61B-003/12; G01J-009/00
Publication Language: English
Filing Language: English

English Abstract
An improved wavefront sensor (300) is provided that enhances the initial focus and precision of imaged spots used to determine the monochromatic wave aberrations of the **eye** . The wavefront sensor includes an adjustment camera (323) that is independent of a lenslet camera (312). A laser (306) in a lower power mode is projected onto the retina of the **eye** and is brought into more precise or sharp focus by a control system employing data from the adjustment camera, which aids in focusing the imaged spots. "Trombone"-type optics (314) are used to adjust the focus of the light projected onto the retina and the imaged spots onto a sensor. The laser (306) has a higher power mode used when acquiring data of the imaged spots from the sensor.

Legal Status (Type, Date, Text)
Publication 20010426 A2 Without international search report and to be republished upon receipt of that report.
Examination 20010907 Request for preliminary examination prior to end of 19th month from priority date
Search Rpt 20020314 Late publication of international search report
Republication 20020314 A3 With international search report.

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Set     Items   Description
S1         10   E3,E6:E7
S2         15   AU='TURNER T'
S3          4   AU='TURNER T N'
S4         14   E5,E9
S5         21   AU='YOUSSEFI G':AU='YOUSSEFI GERHARD'
S6         57   S1:S5
S7         26   S6 AND (EYE? ? OR VISION OR VISUAL)
S8          8   S7 AND PHOTOREFRACT?
S9          8   IDPAT (sorted in duplicate/non-duplicate order)
S10         6   IDPAT (primary/non-duplicate records only)
? show files
File 347:JAPIO Oct 1976-2002/Oct(Updated 030204)
         (c) 2003 JPO & JAPIO
File 348:EUROPEAN PATENTS 1978-2003/Feb W03
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030220,UT=20030213
         (c) 2003 WIPO/Univentio
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200313
         (c) 2003  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
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B.6.10 Patents

10/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014596391
WPI Acc No: 2002-417095/200244
XRPX Acc No: N02-328238

Photorefractive **treatment developing method for** photorefractive **surgery, involves adjusting prospective treatment based on induced deviations, to develop treatment which compensates the induced deviations**

the Patent

Patent Assignee: BAUSCH & LOMB INC (BAUL)
Inventor: COX I G; TURNER T N; YOUSSEFI G
Number of Countries: 097 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200234178	A1	20020502	WO 2001US31823	A	20011012	200244 B
US 20020082629	A1	20020627	US 2000241869	A	20001020	200245
			US 200145694	A	20011019	
AU 200213126	A	20020506	AU 200213126	A	20011012	200257

Priority Applications (No Type Date): US 2000241869 P 20001020; US 200145694 A 20011019
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200234178	A1	E	19	A61F-009/01	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

US 20020082629	A1		A61B-018/20	Provisional application US 2000241869
AU 200213126	A		A61F-009/01	Based on patent WO 200234178

Abstract (Basic): WO 200234178 A1

NOVELTY - A prospective **photorefractive** treatment is adjusted for a higher order or a lower order aberration, based upon a biomechanically or biodynamically induced deviation from the expected result for developing a treatment which compensates the biodynamically and biomedically induced deviation.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) Higher order aberration correction method;
(2) Regression effect lessening method; and
(3) Refractive surgery system.

USE - E.g. **photorefractive** surgery, for correcting higher order aberration in consideration of biodynamical or biomechanical responses of the eye.

ADVANTAGE - Provides better objective and subjective **evaluation** of the **eye** . Enables modeling of eye for adjusting a treatment procedure for vision correction. Provides non-limiting benefit by removing the effects of eye rotation that occurs when a patient changes from a sitting to a supine position.

pp; 19 DwgNo 0/0

Title Terms: TREAT; DEVELOP; METHOD; SURGICAL; ADJUST; PROSPECTING; TREAT; BASED; INDUCE; DEVIATE; DEVELOP; TREAT; COMPENSATE; INDUCE; DEVIATE
Derwent Class: P31; P32; S05
International Patent Class (Main): **A61B-018/20** ; **A61F-009/01**

International Patent Class (Additional): **A61F-009/08**
File Segment: EPI; EngPI

10/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013883059 **Image available**
WPI Acc No: 2001-367272/200138
Related WPI Acc No: 2001-602209
XRPX Acc No: N01-268008

Image alignment in ophthalmic refractive surgery systems for refractive treatment of eye involves aligning two images of eye having spatial relationship, for performing refractive treatment

Patent Assignee: TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME (CHIR)
Inventor: HOHLA K; NEUHANN T; TOENNIES R G N; YOUSSEFI G; TOENNIES R G
Number of Countries: 095 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200128476	A1	20010426	WO 2000EP10373	A	20001020	200138	B
DE 19950791	A1	20010510	DE 1050791	A	19991021	200138	
AU 200115148	A	20010430	AU 200115148	A	20001020	200148	
DE 10014479	A1	20011004	DE 1014479	A	20000323	200158	
BR 200014890	A	20020702	BR 200014890	A	20001020	200252	
			WO 2000EP10373	A	20001020		
EP 1221922	A1	20020717	EP 2000977422	A	20001020	200254	
			WO 2000EP10373	A	20001020		
KR 2002059633	A	20020713	KR 2002705072	A	20020419	200306	

Priority Applications (No Type Date): DE 1014479 A 20000323; DE 1050790 A 19991021; DE 1050791 A 19991021
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200128476	A1	E	66	A61F-009/01	
	Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW				
	Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW				
DE 19950791	A1			A61F-009/007	
AU 200115148	A			A61F-009/01	Based on patent WO 200128476
DE 10014479	A1			A61F-009/007	
BR 200014890	A			A61F-009/01	Based on patent WO 200128476
EP 1221922	A1	E		A61F-009/01	Based on patent WO 200128476
	Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI				
KR 2002059633	A			A61F-009/01	

Abstract (Basic): WO 200128476 A1

NOVELTY - Diagnostic **measurement** of patient's **eye** (12) is done. An image having an iris image (120) of the patient's eye is obtained. A spatial relationship between the image and the diagnostic measurement is determined. A refractive treatment is developed based on the diagnostic measurement. Another image of patient's eye is aligned to obtain spatial relationship with the previous image for performing refractive treatment.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) A system for aligning a refractive correction instrument with a

patient's eye;
(b) Method for providing a course of refractive treatment;
(c) Method of aligning a refractive correction instruments with a patient's eye;
(d) System for aligning refractive diagnostic and treatment data;
(e) Method of aligning refractive tools;
(f) Method for eye alignment and characterization;
(g) System for alignment and **photo refractive** treatment of eye;

(h) Laser system
USE - For ophthalmic refractive surgery systems and iris recognition and location system.
ADVANTAGE - Minimizes severe changes in corneal curvature by sing tapering zone of partial ablation and hence lessons regression. Provides increased accuracy using ophthalmic refractory surgery techniques and ophthalmic refractive diagnostics which produces greater precision in refractive error. Iris data stored in conjunction with refractive diagnostic analysis provides a safety mechanism for subsequent treatment.
DESCRIPTION OF DRAWING(S) - The figure shows a block diagram illustrating acquisition of iris data in conjunction with refractive characteristic data.
pp; 66 DwgNo 2A/13

Title Terms: IMAGE; ALIGN; OPHTHALMIC; REFRACT; SURGICAL; SYSTEM; REFRACT; TREAT; EYE; ALIGN; TWO; IMAGE; EYE; SPACE; RELATED; PERFORMANCE; REFRACT; TREAT
Derwent Class: P31; P32; S05
International Patent Class (Main): **A61F-009/007 ; A61F-009/01**
International Patent Class (Additional): **A61B-003/103 ; A61F-009/008**
File Segment: EPI; EngPI

10/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013718402 **Image available**
WPI Acc No: 2001-202632/200120
XRPX Acc No: N01-144612
Surface shape measurement **for e.g.** eye **corneal tissue, by applying excitation light energy into eye corneal tissue so that tissue forms fluorescent light energy**
Patent Assignee: VISX INC (VISX-N)
Inventor: CAUDLE G; CLAPHAM T N; MUNNERLYN C R; SHIMMICK J K
Number of Countries: 087 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200108547	A2	20010208	WO 2000US20764	A	20000727	200120	B
AU 200067512	A	20010219	AU 200067512	A	20000727	200129	
EP 1210011	A2	20020605	EP 2000955286	A	20000727	200238	
			WO 2000US20764	A	20000727		

Priority Applications (No Type Date): US 99146231 P 19990728
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200108547	A2	E	46	A61B-000/00	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR

IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
AU 200067512 A A61B-000/00 Based on patent WO 200108547
EP 1210011 A2 E A61B-006/00 Based on patent WO 200108547
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

Abstract (Basic): WO 200108547 A2

NOVELTY - An illumination system (20) projects excitation light energy (18) from a light energy source (16) into the corneal tissue (4) of an eye (2). The eye absorbs the excitation light energy, and produces and emits a fluorescent light energy (14). A detector (26) measures the intensity of the fluorescent light energy. A computer (30) determines the tissue surface shape based on the detector result.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(a) a tissue surface region laser sculpting method;
(b) a tissue surface topography measuring system;
(c) a corneal tissue exposed surface topography measuring system;
(d) an exposed tissue surface laser sculpting system;
(e) a laser sculpting system for an ablated region on an exposed stromal tissue surface;
(f) a tissue hydration measuring system;
(g) a system used in an eye corneal tissue resculpting apparatus;
(h) a tissue hydration measuring method;
(i) a compensation method for use in resculpting an eye corneal tissue;
(j) and an eye corneal tissue sculpting method to attain a desired change in an eye optical property.

USE - For measuring surface shape or topography of e.g. eye corneal tissue, during reshaping of eye corneal tissue by eye surgical procedure e.g. **photo refractive** keratectomy PRK, photo therapeutic keratectomy PTK, laser-assisted in situ keratomileusis LASIK.

ADVANTAGE - Facilitates control of tissue reshaping process, since process relies on tissue surface shape **measurement** . Facilitates correction of **eye** refractive vision errors e.g. near or far sightedness, astigmatism. Attains intended eye corneal tissue shape. Eye hydration can be also measured, to ensure correct laser energy pattern applied to eye during actual eye hydration. Ensures effective laser sculpting of eye. Allows use of e.g. visible, ultraviolet or infrared lasers, deuterium lamps, arc lamps, as excitation light energy.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of a surface topography system.

Eye (2)
Corneal tissue (4)
Fluorescent light energy (14)
Light energy source (16)
Excitation light energy (18)
Illumination system (20)
Detector (26)
Computer (30)
pp; 46 DwgNo 2/13

Title Terms: SURFACE; SHAPE; MEASURE; EYE; CORNEA; TISSUE; APPLY; EXCITATION; LIGHT; ENERGY; EYE; CORNEA; TISSUE; SO; TISSUE; FORM; FLUORESCENT; LIGHT; ENERGY
Derwent Class: P31; S05; T01
International Patent Class (Main): **A61B-000/00** ; **A61B-006/00**
File Segment: EPI; EngPI

10/5/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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013429182 **Image available**
WPI Acc No: 2000-601125/200057
Related WPI Acc No: 1997-165514
XRPX Acc No: N00-444749
Automated photorefractive **screening for** measuring **characteristics of** eyes **has camera, flash at center of lens and processor**
Patent Assignee: EYEDX INC (EYED-N)
Inventor: BARTSCH D; BRODY B; BROWN S; GRANET D; HOOVER A
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6089715	A	20000718	US 9762072	A	19971015	200057	B
			US 98173571	A	19981015		

Priority Applications (No Type Date): US 9762072 P 19971015; US 98173571 A 19981015
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6089715	A		10	A61B-003/10	Provisional application US 9762072

Abstract (Basic): US 6089715 A
NOVELTY - The screening system and method uses a digital camera (10) having a lens (14) mounted flash (12), and a suitably programmed processor (18) for locating the eye of the patient (16) in the digital image, modeling structures in the eye, analyzing the digitized eyes in the individual for eye disease, and providing a recommendation for treatment.
USE - The invention can be used to provide information about an individuals eyes, and any possible diseases within the eyes. The processor can also possibly give a recommended course of action or treatment.
ADVANTAGE - This invention can spot possible problems within adults and children's eyes early and therefore reduce the risk of long term amblyopia.
DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram showing the physical components of the eye imaging apparatus.
Camera (10)
Flash (12)
Lens (14)
Patient (16)
Computer processor (18)
pp; 10 DwgNo 1a/7
Title Terms: AUTOMATIC; SCREEN; MEASURE; CHARACTERISTIC; EYE; CAMERA; FLASH ; LENS; PROCESSOR
Derwent Class: P31; S05
International Patent Class (Main): **A61B-003/10**
File Segment: EPI; EngPI

10/5/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

012471286 **Image available**
WPI Acc No: 1999-277394/199923
XRPX Acc No: N99-207936
Movement of an eye of a patient tracking used during eye tissue ablation procedures - receiving reflected light from region of eye **for**

measuring **intensity of reflected light**

Patent Assignee: VISX INC (VISX-N)
Inventor: CLAPHAM T N; OLTEAN I T; SHIMMICK J K
Number of Countries: 084 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9918868	A1	19990422	WO 98US21280	A	19981008	199923	B
AU 9910734	A	19990503	AU 9910734	A	19981008	199937	
EP 1026998	A1	20000816	EP 98953330	A	19981008	200040	
			WO 98US21280	A	19981008		
US 6299307	B1	20011009	US 9762038	P	19971010	200162	
			US 98167957	A	19981006		
JP 2001519196	W	20011023	WO 98US21280	A	19981008	200202	
			JP 2000515509	A	19981008		
MX 2000003395	A1	20010601	MX 20003395	A	20000406	200235	

Priority Applications (No Type Date): US 98167957 A 19981006; US 9762038 P 19971010
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9918868	A1	E	97	A61B-017/36	
Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
AU 9910734	A			A61B-017/36	Based on patent WO 9918868
EP 1026998	A1	E		A61B-017/36	Based on patent WO 9918868
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
US 6299307	B1			A61B-003/14	Provisional application US 9762038
JP 2001519196	W		91	A61B-003/113	Based on patent WO 9918868
MX 2000003395	A1			A61B-017/36	

Abstract (Basic): WO 9918868 A

NOVELTY - The method involves directing a light beam at a region of an eye including portions of a sclera and an iris. A reflected light from the region of the **eye** is received for **measuring** an intensity of the reflected light to determine a relative position of the eye. DETAILED DESCRIPTION - An optical system (20) projects light onto a limbus (10) to track eye movement. The optical system (20) includes a light source (22) that directs a single or several light rays (24) through an optical train (26) onto the limbus (10) of the eye (2). The optical train (26) includes a scanning device (28) that scans the light rays (24) around a trajectory (29) that coincides with the limbus (10)..An INDEPENDENT CLAIM is included for:an optical system for tracking movement of eye of a patient

USE - The invention may be used for tracking the position of the eye during surgical procedures, such as **photo - refractive** keratectomy (PRK) photo-therapeutic keratectomy (PTK) laser in situ keratomileusis (LASIK) or the like.

ADVANTAGE - The present invention is capable of modifying spatial and temporal distribution of laser beam and accurately tracking eye movements in real time so that these movements can be compensated for during, for example, a laser ablation procedure. DESCRIPTION OF DRAWING(S) - The drawing is a block diagram of basic components of an optical system for performing a method of laser ablation according to the present invention. (10) limbus; (20) optical system; (22) light source; (24) light rays; (26) optical train.

Dwg.2/20

Title Terms: MOVEMENT; EYE; PATIENT; TRACK; EYE; TISSUE; ABLATE; PROCEDURE;

RECEIVE; REFLECT; LIGHT; REGION; EYE; MEASURE; INTENSITY; REFLECT; LIGHT
Derwent Class: P31; P32; S02; S05; V07
International Patent Class (Main): **A61B-003/113 ; A61B-003/14 ; A61B-017/36**
International Patent Class (Additional): **A61F-009/007**
File Segment: EPI; EngPI

10/5/10 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010481540 **Image available**
WPI Acc No: 1995-382861/199549
XRPX Acc No: N95-280427

Laser beam delivery and tracking system for ophthalmic medicine - has optical translator which shifts optical axis beam path in accordance with specific scanning pattern such that original beam is shifted onto beam path parallel to optical axis

Patent Assignee: AUTONOMOUS TECHNOLOGIES CORP (AUTO-N); AUTOMATIC TECHNOLOGY CORP (AUTO-N); BURKHALTER J H (BURK-I); DOWNES G R (DOWN-I); FREY R W (FREY-I); GRAY G P (GRAY-I); MCWHIRTER J E (MCWH-I); ZEPKIN N (ZEPK-I); ALCON INC (ALCO-N)
Inventor: BURKHALTER J H; DOWNES G R; FREY R W; GRAY G P; MCWHIRTER J E; ZEPKIN N
Number of Countries: 065 Number of Patents: 019
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9528989	A1	19951102	WO 95US4525	A	19950418	199549	B
AU 9522879	A	19951116	AU 9522879	A	19950418	199608	
TW 287100	A	19961001	TW 95103173	A	19950331	199707	
EP 757579	A1	19970212	EP 95916348	A	19950418	199712	
			WO 95US4525	A	19950418		
ZA 9503143	A	19970326	ZA 953143	A	19950419	199718	
JP 10503662	W	19980407	JP 95527681	A	19950418	199824	
			WO 95US4525	A	19950418		
US 5980513	A	19991109	US 94232615	A	19940425	199954	
EP 1108405	A2	20010620	EP 95916348	A	19950418	200135	
			EP 2001200934	A	19950418		
US 20010016733	A1	20010823	US 94232615	A	19940425	200151	
			US 99376133	A	19990817		
			US 2000742885	A	20001221		
US 20010016734	A1	20010823	US 94232615	A	19940425	200151	
			US 99376133	A	19990817		
			US 2000745193	A	20001221		
US 20010016735	A1	20010823	US 94232615	A	19940425	200151	
			US 99376133	A	19990817		
			US 2000745195	A	20001221		
US 20010016737	A1	20010823	US 94232615	A	19940425	200151	
			US 99376133	A	19990817		
			US 2000742884	A	20001221		
US 20010021846	A1	20010913	US 94232615	A	19940425	200155	
			US 99376133	A	19990817		
			US 2000745285	A	20001221		
US 20010025172	A1	20010927	US 94232615	A	19940425	200159	
			US 99376133	A	19990817		
			US 2000745191	A	20001221		
US 6302879	B1	20011016	US 94232615	A	19940425	200164	
			US 9836345	A	19980306		
US 20010031958	A1	20011018	US 94232615	A	19940425	200166	
			US 99376133	A	19990817		

				US 2000745194	A	20001221		
EP 1147753	A2	20011024		EP 95916348	A	19950418	200171	
				EP 2001203041	A	19950418		
US 20020013577	A1	20020131		US 9836345	A	19980306	200210	N
				US 2001919303	A	20010731		
US 6451008	B1	20020917		US 94232615	A	19940425	200264	
				US 99376133	A	19990817		

Priority Applications (No Type Date): US 94232615 A 19940425; US 99376133 A 19990817; US 2000742885 A 20001221; US 2000745193 A 20001221; US 2000745195 A 20001221; US 2000742884 A 20001221; US 2000745285 A 20001221 ; US 2000745191 A 20001221; US 9836345 A 19980306; US 2000745194 A 20001221; US 2001919303 A 20010731

Cited Patents: US 4069823; US 4702245; US 4718418; US 4848340; US 4881808; US 4972836; WO 8706478

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9528989	A1	E	36	A61N-005/06	
Designated States (National): AM AU BB BG BR BY CA CN CZ EE FI GE HU IS JP KG KP KR KZ LK LR LT LU LV MD MN MX NO NZ PL RO RU SG SI SK TJ TT UA UG UZ VN					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ UG					
AU 9522879	A			A61N-005/06	Based on patent WO 9528989
TW 287100	A			A61F-009/00	
EP 757579	A1	E	36	A61N-005/06	Based on patent WO 9528989
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI NL PT SE					
ZA 9503143	A		37	H01S-000/00	
JP 10503662	W		29	A61F-009/007	Based on patent WO 9528989
US 5980513	A			A61B-017/36	
EP 1108405	A2	E		A61F-009/01	Div ex application EP 95916348 Div ex patent EP 757579
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI NL PT SE					
US 20010016733	A1			A61B-018/20	Cont of application US 94232615 Cont of application US 99376133 Cont of patent US 5980513
US 20010016734	A1			A61B-018/20	Cont of application US 94232615 Cont of application US 99376133 Cont of patent US 5980513
US 20010016735	A1			A61B-018/20	Cont of application US 94232615 Cont of application US 99376133 Cont of patent US 5980513
US 20010016737	A1			A61B-018/20	Cont of application US 94232615 Cont of application US 99376133 Cont of patent US 5980513
US 20010021846	A1			A61B-018/20	Cont of application US 94232615 Cont of application US 99376133 Cont of patent US 5980513
US 20010025172	A1			A61B-018/18	Cont of application US 94232615 Cont of application US 99376133 Cont of patent US 5980513
US 6302879	B1			A61N-005/06	Cont of application US 94232615 Cont of patent US 5980513
US 20010031958	A1			A61B-018/20	Cont of application US 94232615 Cont of application US 99376133 Cont of patent US 5980513
EP 1147753	A2	E		A61F-009/01	Div ex application EP 95916348 Div ex patent EP 757579
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI NL PT					

SE
US 20020013577 A1 A61B-018/20 Div ex application US 9836345
Div ex patent US 6302879
US 6451008 B1 A61B-009/018 Cont of application US 94232615
Cont of patent US 5980513

Abstract (Basic): WO 9528989 A

The laser delivery and tracking mechanism includes a laser (500) which generates light (502) along a path at an energy level for treating a surface. An optical translator (520) shifts the path onto a resulting beam path. An optical angle adjuster (310,316,320,326) changes the angle of the resulting beam path relative to the original path such that the laser light is incident on the surface to be treated.

A motion sensor (100) transmits light energy (101-T) to the surface and receives reflected light energy (101-R) from the surface via the optical angle adjuster. The light energy travels on a parallel path to the shifted beam through the optical angle adjuster. The motion sensor detects movement of the surface relative to the original path and generates error control signals indicating the movement. The optical adjuster responds to the error control signals to change the angle of the resulting beam path.

USE/ADVANTAGE - Eroding moving surface e.g eye's corneal tissue in e.g **photo - refractive** keratectomy. **Eye** movement is **measured** quantitatively and used to automatically redirect both laser delivery and eye tracking parts of system independent of laser positioning mechanism. System operates without interfering with particular treatment laser or surgeon performing procedure.

Dwg.1/5

Title Terms: LASER; BEAM; DELIVER; TRACK; SYSTEM; OPHTHALMIC; MEDICINE; OPTICAL; TRANSLATION; SHIFT; OPTICAL; AXIS; BEAM; PATH; ACCORD; SPECIFIC; SCAN; PATTERN; ORIGINAL; BEAM; SHIFT; BEAM; PATH; PARALLEL; OPTICAL; AXIS
Derwent Class: P31; P32; P34; P55; S05
International Patent Class (Main): **A61B-009/018** ; **A61B-017/36** ; **A61B-018/18** ; **A61B-018/20** ; **A61F-009/00** ; **A61F-009/007** ; **A61F-009/01** ; A61N-005/06; H01S-000/00
International Patent Class (Additional): **A61F-009/08** ; B23K-000/00; G01S-000/00; G05B-000/00
File Segment: EPI; EngPI

10/5/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009626631 **Image available**
WPI Acc No: 1993-320180/199340
XRPX Acc No: N93-246682
Ocular refractivity measuring appts. using photo - refraction **method** - measures **refractivity of** eye **from distribution of illuminance of pupillary images on image medium by light beams obturated by plate having edges extending in two orthogonal directions**
Patent Assignee: CANON KK (CANO)
Inventor: KOHAYAKAWA Y
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5249003	A	19930928	US 91637121	A	19910103	199340	B

Priority Applications (No Type Date): JP 90112906 A 19900427; JP 905065 A

19900112; JP 9051360 A 19900301; JP 90112905 A 19900427
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 5249003 A 19 A61B-003/10

Abstract (Basic): US 5249003 A

The ocular refractivity measuring apparatus includes a light receiving optical system, an illuminating optical system, an imaging device and a calculator. The light receiving optical system includes a light dividing member and an obturating plate. The obturating plate has a linear edge so as to obturate part of an opening of the light receiving optical system. The light dividing member is closer to a fundus of an **eye** to be **measured** in an optical path than the obturating plate. The illuminating optical system has a light source for projecting light in a direction perpendicular to the linear edge of the obturating plate, to the light dividing member so as to illuminate the fundus of the eye via the light dividing member.

The imaging device is provided on a light receiving surface of the light receiving optical system at a position substantially conjugate with a pupil of the eye for detecting the amount of light in two regions of the pupil of the eye separated in a direction perpendicular to the linear edge of the obturating plate. The calculator calculates the refractivity of the eye in accordance with the ratio of the amount of light in the two regions of the pupil of the eye separated in a direction perpendicular to the linear edge detected by the imaging device and in accordance with the distance between the two regions.

USE/ADVANTAGE - Can calculate the astigmatic angle, the degree of astigmatism, and the degree of spherical ametropia of an **eye** to be **measured** even if it has oblique astigmatism.

Dwg.1/26

Title Terms: OCULAR; REFRACT; MEASURE; APPARATUS; PHOTO; REFRACT; METHOD; MEASURE; REFRACT; EYE; DISTRIBUTE; PUPILLARY; IMAGE; IMAGE; MEDIUM; LIGHT ; BEAM; OBTURATING; PLATE; EDGE; EXTEND; TWO; ORTHOGONAL; DIRECTION
Derwent Class: P31; S03; S05
International Patent Class (Main): **A61B-003/10**
File Segment: EPI; EngPI

10/5/12 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX

004409430
WPI Acc No: 1985-236308/198538
XRPX Acc No: N85-176986
Photo - refractor **ocular screening system - has eye reflex, when eyes are exposed to flash of light, recorded on colour film**
Patent Assignee: NAT AERO & SPACE ADMIN (USAS)
Inventor: KERR J H; RICHARDSON J R
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6655605	N	19850702	US 84655605	A	19840928	198538	B
US 4669836	A	19870602				198724	

Priority Applications (No Type Date): US 84655605 A 19840928
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
US 6655605 N 26

Abstract (Basic): US 6655605 N

The method and apparatus is for detecting human eye defects. The invention operates by recording on colour film the eye reflex which occurs when eyes are exposed to a flash of light. The photographs are compared with predetermined standards, to detect eye defects. The base structure of the ocular screening system (10) is a folding interconnect structure (12), comprising hinged sections (14,16,18).

Attached to one end of the structure is a head positioning station (24) which comprises vertical support (26), a head positioning bracket (28) having one end attached to the top of support, and two head positioning lamps (33) to verify precise head positioning. At the opposite end of the interconnect structure is a camera station (34) with camera (38), electronic flash unit (44) and blinking fixation lamp (46), for photographing the **eyes** of persons being **evaluated** .

USE - Partic. for detection of refractive error.

Dwg.2/6

US 6655605 A

The method and apparatus is for detecting human eye defects. The invention operates by recording on colour film the eye reflex which occurs when eyes are exposed to a flash of light. The photographs are compared with predetermined standards, to detect eye defects. The base structure of the ocular screening system (10) is a folding interconnect structure (12), comprising hinged sections (14,16,18).

Attached to one end of the structure is a head positioning station (24) which comprises vertical support (26), a head positioning bracket (28) having one end attached to the top of support, and two head positioning lamps (33) to verify precise head positioning. At the opposite end of the interconnect structure is a camera station (34) with camera (38), electronic flash unit (44) and blinking fixation lamp (46), for photographing the **eyes** of persons being **evaluated** .

USE - Partic. for detection of refractive error.

2/6

Title Terms: PHOTO; REFRACT; OCULAR; SCREEN; SYSTEM; EYE; REFLEX; EYE; EXPOSE; FLASH; LIGHT; RECORD; COLOUR; FILM

Derwent Class: P31; P82

International Patent Class (Additional): **A61B-003/14** ; G03B-029/00

File Segment: EngPI

10/5/13 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

001264613

WPI Acc No: 1975-E8506W/197518

Photo - refractometer **for opthalmic testing - uses fibre optic probe tip surrounded by cylindrical sector lenses in camera**

Patent Assignee: HOWLAND H C (HOWL-I)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 3879113	A	19750422				197518	B

Priority Applications (No Type Date): US 73358246 A 19730507

Abstract (Basic): US 3879113 A

The eye testing apparatus has the light source as the tip of a fibre optic probe, and the restroreflected light is captured by a camera lens surrounding the probe. The **eye** defects are **quantified** by cylindrical sector lenses arranged pie-slice fashion around the probe, each of which forms the arm of a star pattern on the film which is a measure of the amount and kind of refractive error. The apparatus

is extended by the use of fixed reflectors on eyeglass frames so tha phoria may be measured from pupil spacing and position relative to the fixed images of the reflectors. The methods take advantage of inherent chromatic abberation of the eye.
Title Terms: PHOTO; REFRACTOMETER; TEST; FIBRE; OPTICAL; PROBE; TIP; SURROUND; CYLINDER; SECTOR; LENS; CAMERA
Derwent Class: P31
International Patent Class (Additional): **A61B-003/14**
File Segment: EngPI

10/5/15 (Item 15 from file: 347)
DIALOG(R)File 347:JAPIO

03591825 **Image available**
EYE REFRACTION FORCE **MEASURING** DEVICE

PUB. NO.: 03-254725 [JP 3254725 A]
PUBLISHED: November 13, 1991 (19911113)
INVENTOR(s): KOBAYAKAWA YOSHI
APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 02-051360 [JP 9051360]
FILED: March 01, 1990 (19900301)
INTL CLASS: [5] **A61B-003/103**
JAPIO CLASS: 28.2 (SANITATION -- Medical)
JOURNAL: Section: C, Section No. 909, Vol. 16, No. 54, Pg. 52, February 12, 1992 (19920212)

ABSTRACT
PURPOSE: To improve the operation performance of a device using the **photorefraction** method by calculating the refraction force of an inspected eye by using the outputs of a pupil projection factor-detecting means in a focusing light-receiving optical system and an image pick-up element installed on the light receiving surface of the optical system.

CONSTITUTION: A half mirror 4, light shielding plate 5, lends 6, image pick-up element 7 which is conjugate with a pupil Ep with respect to the lens 6, and a video camera 14 are installed in this order in the optical path leading from the eye-ground Er of an inspected eye. Through the lens 6, light is focused in the direction of arrow by a driving part 15, and the position information is inputted into a calculator 20, and the pupil projection factor is detected. Into the calculator 20, the output of the video camera 14 is inputted, besides the position information of the lends 6, and the light quantity ratio or contrast in two regions of the pupil is calculated, and the refraction force of the inspected eye is calculated on the basis of the light quantity ratio or contrast. Accordingly, in the refraction force measurement using the **photorefraction** method, the operation distance between the inspected eye and the device body can be set arbitrarily, and adjustment has only to be made of the focus optical system in this state, and the operation performance can be improved drastically.

10/5/16 (Item 16 from file: 347)
DIALOG(R)File 347:JAPIO

03547331 **Image available**
EYE REFRACTING POWER **MEASURING** INSTRUMENT

PUB. NO.: 03-210231 [JP 3210231 A]
PUBLISHED: September 13, 1991 (19910913)
INVENTOR(s): KOBAYAKAWA YOSHI
APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 02-005065 [JP 905065]
FILED: January 12, 1990 (19900112)
INTL CLASS: [5] **A61B-003/103**
JAPIO CLASS: 28.2 (SANITATION -- Medical)
JOURNAL: Section: C, Section No. 892, Vol. 15, No. 484, Pg. 77, December 09, 1991 (19911209)

ABSTRACT

PURPOSE: To execute the **eye** refracting power **measurement** with high accuracy by a **photorefraction** method by calculating the examined eye refracting power, based on a light quantity ratio detected by an image pickup element in two areas of an examined eye pupil separated by a prescribed distance in the direction intersecting with a linear edge of a light shielding plate.

CONSTITUTION: In a light receiving optical system, a light splitting member 4, and light shielding plates 5, 3 having a linear edge 50 so as to obstruct a part of an opening of the optical system are provided in order in an optical path from an eyeground Er of an eye E to be examined. Also, in an irradiating optical system, a light source part 1 is provided in the direction intersecting with the edge 50 and the eyeground Er of the eye to be examined is irradiated through the light splitting member 4. Moreover, an image pickup element 7 is provided on the light receiving surface of the above-mentioned light receiving optical system being in a roughly conjugate position to the pupil Ep of the eye. In such a state, in a computing element 20, the examined eye refracting power is calculated, based on a light quantity ratio or contrast detected by the image pickup element 7 in two areas of the pupil Ep of the eye separated by a prescribed distance in the direction intersecting with the linear edge 50. Thus, the **eye** refracting power **measurement** can be executed with high accuracy with a **photorefraction** method.

10/5/17 (Item 17 from file: 347)
DIALOG(R)File 347:JAPIO

03331926 **Image available**
PHOTOREFRACTION APPARATUS

PUB. NO.: 02-307426 [JP 2307426 A]
PUBLISHED: December 20, 1990 (19901220)
INVENTOR(s): KOBAYAKAWA YOSHI
APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 01-129286 [JP 89129286]
FILED: May 22, 1989 (19890522)
INTL CLASS: [5] **A61B-003/103**
JAPIO CLASS: 28.2 (SANITATION -- Medical)
JOURNAL: Section: C, Section No. 811, Vol. 15, No. 92, Pg. 125, March 06, 1991 (19910306)

ABSTRACT

PURPOSE: To make a measurement with high accuracy possible by judging strength of a reflecting light in a pupil based on a shade pattern of a

pupil image and an iris image and **measuring** an **eye** refractive value.

CONSTITUTION: When an examined eye E is normal, all the light bundles from a pupil Ep are received on a lens and reach a recording medium 3 and the whole area in a pupil image P surrounded by an Aris image I on the recording medium 3 becomes bright. When the examined eye F is iongsightedness, a reflected light bundle from an eyeground Er disperses when it passes through the pupil and as only a light bundle from the central part of the pupil Ep reaches the lens 2, only the central part of the pupil image P on the recording medium 3 becomes bright. When the examined eye E is shortsightedness, as the reflected light bundle from the eyeground Er is condensed before a half mirror 1 after it passes through the pupil Ep and reaches the lens 2, only upper part of the pupil image P on the recording image 3 becomes bright. As described above, as a shade pattern of the pupil image P in the iris image 1 on the recording medium 3 becomes different depending on the refractive value of the pupil Ep of the examined **eye** E, **measurement** of **eye** refractive value can be done based on this shade pattern by using a pattern detecting device and an arithmetic device.

10/5/8 (Item 8 from file: 350)

013215441 **Image available**
WPI Acc No: 2000-387315/200033
XRPX Acc No: N00-289984

Eye tracking method for use during ophthalmic laser surgery, involves directing eye-safe light beams onto the eye and analyzing the image of reflected light

Patent Assignee: LIONS EYE INST WESTERN AUSTRALIA LTD (LION-N); Q-VIS LTD (QVIS-N); TAYLOR N M (TAYL-I); VAN SAARLOOS P P (VSAA-I)
Inventor: TAYLOR N M; VAN SAARLOOS P P
Number of Countries: 091 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200027273	A1	20000518	WO 99AU978	A	19991108	200033 B
AU 200015331	A	20000529	AU 200015331	A	19991108	200041
EP 1126778	A1	20010829	EP 99957709	A	19991108	200150
			WO 99AU978	A	19991108	
US 20020051116	A1	20020502	WO 99AU978	A	19991108	200234
			US 2001849015	A	20010504	

Priority Applications (No Type Date): AU 986973 A 19981106
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200027273	A1	E	32	A61B-003/113	
Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW					
AU 200015331	A			A61B-003/113	Based on patent WO 200027273
EP 1126778	A1	E		A61B-003/113	Based on patent WO 200027273
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT RO SE SI					
US 20020051116	A1			A61B-003/10	Cont of application WO 99AU978

Abstract (Basic): WO 200027273 A1

NOVELTY - Eye-safe light beams are directed onto the eye such that area of incidence is substantially larger then the pupil. The image of light beam reflected is analyzed by extracting light beam components that produce bright eye reflection in received image. The position of **eye** is **determined** by further analyzing the image on the basis of identification.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for eye tracker.

USE - For ophthalmic laser surgery for refractive correction in eye such as **photorefractive** keratectomy, laser in-situ keratomileusis and for gaze analysis application for ablating minute portions of cornea tissue.

ADVANTAGE - Facilitates tracking of eye movement in real time so that laser source is controlled to compensate for eye movement.

DESCRIPTION OF DRAWING(S) - The figure illustrates relevant components of ophthalmic surgery apparatus.

pp; 32 DwgNo 1/6

Title Terms: EYE; TRACK; METHOD; OPHTHALMIC; LASER; SURGICAL; DIRECT; EYE; SAFE; LIGHT; BEAM; EYE; IMAGE; REFLECT; LIGHT
Derwent Class: P31; S05; T04

International Patent Class (Main): **A61B-003/10** ; **A61B-003/113**
International Patent Class (Additional): **A61B-018/20** ; G06K-009/00
File Segment: EPI; EngPI

10/TI/2 (Item 2 from file: 350)
DIALOG(R)File 350:(c) 2003 Thomson Derwent. All rts. reserv.

Photo - refractive **keratectomy device for treatment of eye, directs centering and fixing light beams of different wavelengths onto eye**

10/TI/4 (Item 4 from file: 350)
DIALOG(R)File 350:(c) 2003 Thomson Derwent. All rts. reserv.

Photorefractive **keratectomy performing method, involves measuring laser pulse energy, laser pulse size and laser pulse location using power meter at time of performing ablation**

10/TI/6 (Item 6 from file: 350)
DIALOG(R)File 350:(c) 2003 Thomson Derwent. All rts. reserv.

Method for correcting vision in the cases of presbyopia

10/TI/8 (Item 8 from file: 350)
DIALOG(R)File 350:(c) 2003 Thomson Derwent. All rts. reserv.

Eye tracking method for use during ophthalmic laser surgery, involves directing eye-safe light beams onto the eye and analyzing the image of reflected light

10/TI/14 (Item 14 from file: 347)
DIALOG(R)File 347:(c) 2003 JPO & JAPIO. All rts. reserv.

EYE REFRACTING POWER **MEASURING** INSTRUMENT

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Set     Items   Description
S1     203731   VISION? OR VISUAL? OR EYE? ?
S2     165449   PHOTOREFRACT? OR REFRACT?
S3     554703   LASER? OR LASIK OR PRK OR LVC
S4    2367338   MEASUR? OR ASSESS? OR QUANTIF? OR QUALIF? OR DETERMIN? OR -
             COMPUT? OR EVALUAT?
S5        694   PHOTOREFRACT? OR PHOTO()REFRACT?
S6       8698   S1(3N)S4
S7         20   S5 AND S6
S8         17   S7 AND IC=(A61F OR A61B)
S9         17   IDPAT (sorted in duplicate/non-duplicate order)
S10        17   IDPAT (primary/non-duplicate records only)
? show files
File 347:JAPIO Oct 1976-2002/Oct(Updated 030204)
         (c) 2003 JPO & JAPIO
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200315
         (c) 2003  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
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Set     Items   Description
S1     203731   VISION? OR VISUAL? OR EYE? ?
S2        694   PHOTOREFRACT? OR PHOTO()REFRACT?
S3    2367338   MEASUR? OR ASSESS? OR QUANTIF? OR QUALIF? OR DETERMIN? OR -
            COMPUT? OR EVALUAT?
S4       8698   S1(3N)S3
S5         20   S2 AND S4
S6          4   S4 AND PRK
S7          0   S6 NOT S5
? show files
File 347:JAPIO Oct 1976-2002/Oct(Updated 030204)
         (c) 2003 JPO & JAPIO
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200315
         (c) 2003  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
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fT Patents

9/5,K/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00901814
METHOD AND SYSTEM FOR IMPROVING VISION
PROCEDE ET SYSTEME D'AMELIORATION DE LA VISION
Patent Applicant/Assignee:
BAUSCH & LOMB INCORPORATED, One Bausch & Lomb Place, Rochester, NY 14604-2701, US, US (Residence), US (Nationality)
Inventor(s):
COX Ian G, 79 Partridge Hill, Honeoye Falls, NY 14472, US,
TURNER Timothy N, 2558 West 6830 South, West Jordan, UT 84084, US,
YOUSSEFI Gerhard, Reichardtstrasse 1, 84028 Landshut, DE,
Legal Representative:
GREENER William (et al) (agent), One Bausch & Lomb Place, Rochester, NY 14604-2701, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200234178 A1 20020502 (WO 0234178)
Application: WO 2001US31823 20011012 (PCT/WO US0131823)
Priority Application: US 2000241869 20001020
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **A61F-009/01**
Publication Language: English
Filing Language: English

English Abstract
Methods and apparatus for improving vision incorporate the effects of biodynamical and biomechanical (biological) responses of the eye. The eye produces a biological response to trauma, such as a LASIK keratectomy or other necessary traumatic procedure in preparation for refractive surgery. By observing the biological response, a prospective treatment to correct higher order aberrations is adjusted to compensate for the biological effects. An improved photorefractive surgery system incorporates one or more suitable diagnostic devices that provide biological response information in such a manner that the patient need not change position from that assumed for the surgical procedure.

Legal Status (Type, Date, Text)
Publication 20020502 A1 With international search report.
Publication 20020502 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
Examination 20021017 Request for preliminary examination prior to end of 19th month from priority date

9/5,K/2 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00896595 **Image available**

DETERMINATION OF OCULAR REFRACTION FROM WAVEFRONT ABERRATION DATA
DETERMINATION DE REFRACTION OCULAIRE A PARTIR DE DONNEES D'ABERRATION DE FRONT D'ONDES

Patent Applicant/Assignee:
UNIVERSITY OF ROCHESTER, 518 Hylan Building, Rochester, NY 14627, US, US (Residence), US (Nationality)
Inventor(s):
WILLIAMS David, 28 Shelter Creek Lane, Fairport, NY 14623, US,
GUIRAO Antonio, 280 Quinby Road, Rochester, NY 14623, US,
Legal Representative:
GREENBAUM Michael C (et al) (agent), Blank Rome Comisky & McCauley LLP, 900 17th Street, NW, Suite 1000, Washington, DC 20006, US,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200230273 A1 20020418 (WO 0230273)
Application: WO 2001US31025 20011004 (PCT/WO US0131025)
Priority Application: US 2000238465 20001010
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **A61B-003/103**
Publication Language: English
Filing Language: English

English Abstract
Ocular refraction is determined from wavefront aberration data, and an optimum customized correction is designed. The eye's wave aberration is measured (202) by using a detector such as a Shack-Hartmann detector (714). From the aberration, an image metric is calculated (214), and the second-order aberrations which optimize that metric are determined (218). From that optimization, the refractive correction (220) required for the eye is determined. The image metric is one of several metrics indicating the quality of the image on the retinal plane or a proxy for such a metric. The required refractive correction (220) can be used to form a lens or to control eye surgery. If it is possible to detect more aberrations than can be corrected, those aberrations are corrected which most affect vision, or for which the eye's error tolerance is lowest.

Legal Status (Type, Date, Text)
Publication 20020418 A1 With international search report.
Publication 20020418 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
Examination 20021017 Request for preliminary examination prior to end of 19th month from priority date

Detailed Description
... the retina and emerging from the eye, the ocular aberrations reduce the accuracy of the **measurement** .

The **eye** suffers from many higher-order aberrations beyond defocus and astigmatism, which introduce defects on the pattern of light detected. Thus, **photorefractive** methods are based on paraxial optical analysis, and it has been shown that there can...

9/5,K/5 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00795303 **Image available**
IRIS RECOGNITION AND TRACKING FOR OPTICAL TREATMENT
RECONNAISSANCE ET SUIVI DE L'IRIS EN VUE D'UN TRAITEMENT OPTIQUE
Patent Applicant/Assignee:
TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME, Max-Planck-Strasse 6, 85609 Dornach, DE, DE (Residence), DE (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
HOHLA Kristian, Johann-Strauss-Strasse 15, 85591 Vaterstetten, DE, DE (Residence), DE (Nationality), (Designated only for: US)
NEUHANN Thomas, Herzogstrasse 48, 80803 Munchen, DE, DE (Residence), DE (Nationality), (Designated only for: US)
YOUSSEFI Gerhard, Reichardtstrasse 1, 84028 Landshut, DE, DE (Residence), DE (Nationality), (Designated only for: US)
TOENNIES Roland Gunter Norbert, Neufeldstrasse 55, 82110 Olching, DE, DE (Residence), DE (Nationality), (Designated only for: US)
Legal Representative:
VOSSIUS & PARTNER (agent), Siebertstrasse 4, 81675 Munchen, DE,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200128476 A1 20010426 (WO 0128476)
Application: WO 2000EP10373 20001020 (PCT/WO EP0010373)
Priority Application: DE 19950791 19991021; DE 19950790 19991021; DE 10014479 20000323
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **A61F-009/01**
International Patent Class: **A61B-003/103**
Publication Language: English
Filing Language: English

English Abstract
A system and method are provided in which an iris or eye image is taken during a refractive diagnostic analysis. The image is employed for aligning data from the analysis with data from other refractive analysis instruments, as well as aligning a refractive surgical tool, such as a laser, with the eye for treatment. Further, the stored iris image is compared with the patient's iris before treatment, verifying that the correct eye is to be treated with a developed treatment pattern. A variety of refractive instruments can be used, such as corneal topography systems and wavefront aberration systems.

Legal Status (Type, Date, Text)
Publication 20010426 A1 With international search report.
Publication 20010426 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
Examination 20010907 Request for preliminary examination prior to end of 19th month from priority date
Correction 20020919 Corrected version of Pamphlet: pages 1/15-15/15, drawings, replaced by new pages 1/15-15/15; due to late transmittal by the receiving Office
Republication 20020919 A1 With international search report.

Detailed Description
... sensors, and the like used to make diagnostic measurements to obtain refractive data about the **eye** being **measured** . Refractive data thus refers generally to features or charaeteristics of the eye that cause less...

...g., an excimer laser which is typically used for photoablation in PRK, LASIK and other **photo refractive** surgery. The term "norrnalization" as used herein will be understood from the description to follow... displayed to the practitioner though a display systern.

A system for performing the alignment and **photo - refractive** treatments discussed above includes most basically a first camera used to acquire the first image...

...one skilled in the art will appreciate, a laser system capable of providing the developed **photo - refractive** treatment that preferably includes a second camera used to acquire another image of the **eye** , a **computer** system used for developing and aligning the **photorefractive** treatment linked to the laser systern, the first camera and the diagnostic tool, and a control system attending to implementation of the **photo - refractive** treatment that is suitably linked to other components of the systern. In an aspect of...

Claim
... acquiring a second image of the eye including the dilated pupil obtaining a diagnostic refractive **measurement** of the **eye** having the dilated pupil; and developing a **photorefractive** treatment from the diagnostic measurement for a refractive correction of thc eye.

62 The method...providing the photorefractive treatment including a second camera used to acquire another image of the **eye** ; a **computer** system used for developing and aligning the **photorefractive** treatment linked to the laser systern, the first camera and the diagnostic instrument; and a control system used to implement the **photorefractive** treatment linked to the computer system and the laser systern.

90 The system of claim...

9/5,K/8 (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00493887 **Image available**
AUTOMATED PHOTOREFRACTIVE SCREENING

EXAMEN PHOTOREFRACTIF AUTOMATISE

Patent Applicant/Assignee:
BROWN Stuart,
Inventor(s):
BROWN Stuart,
HOOVER Adam,
BROWN Stuart,
BRODY Barbara,
BARTSCH Dirk-Uwe,
GRANET David,

Patent and Priority Information (Country, Number, Date):
Patent: WO 9925239 A1 19990527
Application: WO 98US24275 19981113 (PCT/WO US9824275)
Priority Application: US 9765537 19971114; US 98173571 19981015
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Main International Patent Class: **A61B-003/113**
International Patent Class: G06F-015/42
Publication Language: English

English Abstract
A system and method for locating and modeling eyes in imagery for automated **photorefractive** screening. The invention includes a system and method for locating a patient's (16) eyes in a digital image that includes each eye as illuminated by a near-axis flash (12), including automatically finding light reflexes in the digital images as indicative of the location of each eye. Automatically finding light reflexes includes analyzing such light reflexes to determine possible pupil and sclera borders. The invention further includes automatically fitting a corresponding model to such possible pupil and sclera borders, analyzing the model of each **eye** to **determine** possible abnormalities in each eye; and outputting a possible diagnosis for each eye based on such analyzing. Other aspects of the invention include measuring retinal reflexes and corneal reflexes from the indicated eye models as an indicator of anomalies in the patient's (16) eyes, and generating a digital image of each of a patient's (16) eyes with a camera having a flash (12) positioned near to a center line of a lens of the camera (10) so as to generate images with bright, sharp light reflexes.

Detailed Description
AUTOMATED PHOTOREFRACTIVE SCREENING
TECHNICAL FIELD
This invention relates to instruments for **measuring** characteristics of **eyes** , and more particularly to a system and method for locating and modeling eyes in imagery for automated **photorefractive** screening, and for enabling determination of the presence of anomalies in the patient's visual...the face of an and a suitably programmed processor, such as a general purpose digital **computer** , for locating an **eye** of the individual in the digital image, modeling structures in the eye, analyzing the digitized...

9/5,K/9 (Item 9 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00402147 **Image available**

CONOSCOPIC SYSTEM FOR REAL-TIME CORNEAL TOPOGRAPHY

SYSTEME CONOSCOPIQUE D'OBTENTION EN TEMPS REEL D'UNE TOPOGRAPHIE DE LA CORNEE

Patent Applicant/Assignee:
CALIFORNIA INSTITUTE OF TECHNOLOGY,
Inventor(s):
MOSER Christophe,
BARBASTATHIS Georgios,
PSALTIS Demetri,

Patent and Priority Information (Country, Number, Date):
Patent: WO 9742891 A1 19971120
Application: WO 97US8083 19970509 (PCT/WO US9708083)
Priority Application: US 9617539 19960510; US 9628945 19961018
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN GH KE LS MW SD SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Main International Patent Class: **A61B-017/36**
International Patent Class: G01B-09:021
Publication Language: English

English Abstract
The invention is a corneal topographer (240) based on cornea-scope holography with partially coherent illumination. Corneal topographic measurements can be accomplished at a processing rate higher than the standard video rate of 30 Hz. The corneo-scope measurements can be used in an optic electronic servo (220) to control photo-refractive keratectomy system (200) in real time for an improved accuracy in laser ablation of a corneal surface of the eye (230).

Claim
... is system, and said topographer, said controller controlling said topographer to achieve a corneal topographic **measurement** of said target **eye** at a processing rate higher than said pulse repetition rate.
I 10. A system as...

...wherein said ablating laser beam is controlled by said controller based on said corneal topographic **measurement** of said target **eye** .

11 A system as in claim 10, wherein said control of said ablating laser beam...

```
Set     Items   Description
S1     215516   VISION? OR VISUAL? OR EYE? ?
S2        909   PHOTOREFRACT? OR PHOTO()REFRACT?
S3     926501   MEASUR? OR ASSESS? OR QUANTIF? OR QUALIF? OR DETERMIN? OR -
             COMPUT? OR EVALUAT?
S4     926545   COMPUTES OR S3
S5      24560   S1(3N)S4
S6         13   S2(S)S5
S7          9   S6 AND IC=(A61F OR A61B)
S8          9   IDPAT (sorted in duplicate/non-duplicate order)
S9          9   IDPAT (primary/non-duplicate records only)
? show files
File 348:EUROPEAN PATENTS 1978-2003/Feb W04
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030227,UT=20030220
         (c) 2003 WIPO/Univentio
```

12/5,K/3 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00980170 **Image available**
MEASURING REFRACTIVE CHARACTERISTICS OF HUMAN EYES
MESURE DE CARACTERISTIQUES DE REFRACTION DE L'OEIL HUMAIN

Patent Applicant/Assignee:
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Legal Representative:
MONTGOMERY John W (et al) (agent), Haynes and Boone, LLP, Suite 4300, 1000 Louisiana, Houston, TX 77002, US,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200309746 A1 20030206 (WO 0309746)
Application: WO 2002US24075 20020729 (PCT/WO US0224075)
Priority Application: US 2001308301 20010727
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **A61B-003/10**
Publication Language: English
Filing Language: English

Bad Date

English Abstract
An apparatus and method for measuring refractive characteristics of human eyes with an objective refraction measuring device for measuring refraction in at least one eye, the objective refraction measuring system (10) having a proximal end and a distal end, the objective refraction measuring system suitable for looking in the proximal end and seeing out the distal end; an open field visual target (50). A viewing lane (20) is provided between the eye (42) and (44) the open field visual target (50), the viewing lane has sufficient length to allow for focusing the eye at infinity and for natural accommodation at true distance targets, such near distances such as reading distances. The objective refraction measuring device can be positioned in the viewing lane to measure the eye while the eye is focused on the open field visual target. In one embodiment the objective refraction measuring device may measure refraction characteristics of an eye continuously, substantially continuously or incrementally during dynamic accommodation or changes of the lighting conditions while providing true distance visual targets with the open field of view through the apparatus. In another embodiment the device objectively measures refraction characteristics of both eyes working together when viewing the open field visual target.

Legal Status (Type, Date, Text)
Publication 20030206 A1 With international search report.
Publication 20030206 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Detailed Description
... humor, and the retinal topography. Presently, the refractive characteristics of these components are not objectively **measured** using open field **visual** target. It has been discovered by applicants that the target is important to establish a...

...the extent that the visual target is stationary, as is the situation in most known **eye measuring** techniques, the **visual** target is 1 5 sometimes called a "fixation target." During dynamic testing, according to one...

12/5,K/5 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00853337
METHOD AND SYSTEM FOR CONTROL OF HIGH RESOLUTION HIGH SPEED DIGITAL MICROMIRROR DEVICE FOR LASER REFRACTIVE EYE SURGERY

Patent Applicant/Assignee:
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Inventor(s):
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FREEMAN James F, 2068 Old Lake Pike, Memphis, TN 38119, US,
THOMAS David E, 6495 Fiske Road, Bartlett, TN 38135, US,
DAVIS Jack H, 1019 Crosswinds Cove, Collierville, TN 38017, US,
Legal Representative:
GORDON David P (et al) (agent), 65 Woods End Road, Stamford, CT 06905, US

Patent and Priority Information (Country, Number, Date):
Patent: WO 200185045 A1 20011115 (WO 0185045)
Application: WO 2001US14100 20010502 (PCT/WO US0114100)
Priority Application: US 2000567155 20000509; US 2000567264 20000509; US 2000568166 20000509; US 2000718536 20001122
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CO CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: **A61B-018/18**
Publication Language: English
Filing Language: English

English Abstract
A laser eye surgery system includes a laser for producing a laser beam capable of making refractive corrections, an optical system for shaping

and conditioning the laser beam, a digital micromirror device (DMD) for reflecting the shaped and conditioned beam toward the eye, a computer system for controlling the mirrors of the DMD, and an eye tracking system which tracks the position of the eye and provides feedback to the computer system.

Legal Status (Type, Date, Text)
Publication 20011115 A1 With international search report.
Publication 20011115 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Detailed Description
... approach, in either the off-line or real-time approaches, the wavefront sensor system 140 **measures** the **eye** system aberrations and creates a 3-D contour profile (substantially similar to Fig. 8(a...system 1 10. The surgeon then preps at 508 the patient for laser refractive surgery (**PRK** or LASIK). The appropriate layer data is then loaded at 510 into a buffer. The...

12/TI/1 (Item 1 from file: 348)
DIALOG(R)File 348:(c) 2003 European Patent Office. All rts. reserv.

Laser beam delivery and eye tracking system
Laserstrahlabgabe- und Augenverfolgsystem
Systeme d'emission de faisceau laser et de suivi de l'oeil

12/TI/2 (Item 2 from file: 348)
DIALOG(R)File 348:(c) 2003 European Patent Office. All rts. reserv.

Laser beam delivery and eye tracking system
Laserstrahlabgabe- und Augensuchsystem
Systeme d'emission de faisceau et de detection du mouvement de l'oeil

12/TI/4 (Item 4 from file: 349)
DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

METHODS OF OBTAINING OPHTALMIC LENSES PROVIDING THE EYE WITH REDUCED ABERRATIONS
PROCEDES PERMETTANT D'OBTENIR DES LENTILLES OPHTALMIQUES DONNANT A L'OEIL DES ABERRATIONS REDUITES

12/TI/6 (Item 6 from file: 349)
DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

EYE REGISTRATION AND ASTIGMATISM ALIGNMENT CONTROL SYSTEMS AND METHOD
PROCEDES ET SYSTEMES DE COMMANDE D'ENREGISTREMENT DE MESURES D'OEIL ET D'ALIGNEMENT D'ASTIGMATISME

12/TI/7 (Item 7 from file: 349)
DIALOG(R)File 349:(c) 2003 WIPO/Univentio. All rts. reserv.

LASER EYE SURGERY SYSTEM USING WAVEFRONT SENSOR ANALYSIS TO CONTROL DIGITAL MICROMIRROR DEVICE (DMD) MIRROR PATTERNS

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Set     Items   Description
S1     215516   VISION? OR VISUAL? OR EYE? ?
S2        909   PHOTOREFRACT? OR PHOTO()REFRACT?
S3     926501   MEASUR? OR ASSESS? OR QUANTIF? OR QUALIF? OR DETERMIN? OR -
            COMPUT? OR EVALUAT?
S4     926545   COMPUTES OR S3
S5      24560   S1(3N)S4
S6         13   S2(S)S5
S7          9   S6 AND IC=(A61F OR A61B)
S8         18   S5(S)PRK
S9         13   S8 NOT S7
S10         7   S9 AND IC=(A61B OR A61F)
S11         7   IDPAT (sorted in duplicate/non-duplicate order)
S12         7   IDPAT (primary/non-duplicate records only)
? show files
File 348:EUROPEAN PATENTS 1978-2003/Feb W04
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030227,UT=20030220
         (c) 2003 WIPO/Univentio
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B.6150 NPL

10/5/5 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC

04119177 INSPEC Abstract Number: A9209-8760G-017
Title: Multimeridian photorefraction: a technique for the detection of visual defects in infants and preverbal children
Author(s): Cole, T.D.
Journal: Johns Hopkins APL Technical Digest vol.12, no.2 p.166-75
Publication Date: April-June 1991 Country of Publication: USA
CODEN: JHADDQ ISSN: 0270-5214
Abstract: The Applied Physics Laboratory and the Department of Ophthalmology at the Johns Hopkins Medical Institutions have collaborated in a two year effort to identify and develop techniques based on photorefraction for the visual screening of young children. This article briefly discusses visual screening concerns and photorefractive theory and techniques. Difficulties associated with the **measurement** of **visual** defects using conventional **photorefractors** are identified, and the Laboratory's efforts to design two photorefractors intended to overcome the limitations of previous instruments are described along with the operating principles of the two prototypes. An introduction to laser retinoscopy is also presented. Research on a more comprehensive device-a multimeridian laser retinoscope-is under way. (20 Refs)

10/5/9 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11497415 BIOSIS NO.: 199800278747
Screening of myopic photorefractive **keratectomy in** eye **bank** eyes **by** computerized **videokeratography.**
AUTHOR: Lim-Bon-Siong Rueben; Williams Joseph M; Samapunphong Sopit; Chuck Roy S; Pepose Jay S(a)
AUTHOR ADDRESS: (a)Dep. Ophthalmol. Visual Sci., Washington Univ. Sch. Med., Campus Box 8096, 660 S. Euclid Ave., S**USA
JOURNAL: Archives of Ophthalmology 116 (5):p617-623 May, 1998
ISSN: 0003-9950

ABSTRACT: Background: In contrast to incisional keratotomy, corneas that have undergone photorefractive keratectomy may be difficult to detect by inspection with slitlamp biomicroscopy alone. Eye bank corneas that have undergone high myopic refractive surgical correction could potentially result in substantial postoperative hyperopic correction if used as donor tissue for corneal transplantation. Surface irregularities or displacement of the treated optical zone within the graft in relation to the entrance pupil of the recipient could result in significant induced astigmatism and distortion. This study examines computerized videokeratographic screening of eye bank globes as a strategy for detecting myopic photorefractive keratectomy. Methods: Preoperative and postoperative corneal topographic maps of freshly enucleated human and rabbit eyes that have undergone myopic photorefractive keratectomy with an excimer laser were placed in a globe-fixating device and analyzed using a vertically oriented videokeratoscope. The same system was applied in an actual eye bank setting, and potentially transplantable globes from donors without a history of corneal surgery were analyzed. Results: Computerized videokeratography using a vertically mounted system

reliably detected photorefractive keratectomy in 12 of 12 human eye bank corneas treated by excimer photorefractive keratectomy in a range between -1.5 to -6.0 diopters. This method also detected similar changes on lased rabbit corneas enucleated 6 weeks after excimer surgery. Data processed with the tangential mode yielded a "bull's-eye" topography pattern reflecting central corneal flattening that was more sensitive in detecting myopic corrections than the conventional axial formula-based color maps. False-positive results were not detected in 96 cadaver globes sequentially screened in the eye bank. Conclusions: Computerized videokeratogaphy represents a feasible method to screen donor globes for myopic photorefractive keratectomy as shown by the in vitro and rabbit models. However, only whole globes and not corneoscleral sections are amenable to processing with this technique. Tangential maps provided greater sensitivity in detecting low myopic corrections than the axial formula-based color maps.

10/5/67 (Item 8 from file: 144)

13702661 PASCAL No.: 98-0457357

Spot diameters for scanning photo-refractive keratectomy : A comparative study

Ophthalmic technologies VIII : San Jose CA, 24-25 January 1998

MANNS F; PAREL J M
ROL Pascal O, ed; JOOS Karen M, ed; MANNS Fabrice, ed
International Society for Optical Engineering, Bellingham WA, United States.; US Air Force Office of Scientific Research, Washington DC, United States.; International Biomedical Optics Society, United States.

Ophthalmic technologies. Conference, 8 (San Jose CA USA) 1998-01-24
Journal: SPIE proceedings series, 1998, 3246 89-96
ISBN: 0-8194-2685-7 ISSN: 1017-2653 Availability: INIST-21760; 354000070107710120

Purpose: The purpose of this study was to compare with computer simulations the duration, smoothness and accuracy of scanning photo-refractive keratectomy with spot diameters ranging from 0.2 to 1 mm. Methods: We calculated the number of pulses per diopter of flattening for spot sizes varying from 0.2 to 1 mm. We also computed the corneal shape after the correction of 4 diopters of myopia and 4 diopters of astigmatism with a 6 mm ablation zone and a spot size of 0.4 mm with 600 mJ/cm SUP 2 peak radiant exposure and 0.8 mm with 300 mJ/cm SUP 2 peak radiant exposure. The accuracy and smoothness of the ablations were compared. Results: The repetition rate required to produce corrections of myopia with a 6 mm ablation zone in a duration of 5s per diopter is on the order of 1 kHz for spot sizes smaller than 0.5 mm, and of 100 Hz for spot sizes larger than 0.5 mm. The accuracy and smoothness after the correction of myopia and astigmatism with small and large spot sizes were not significantly different. Conclusions: This study seems to indicate that there is no theoretical advantage for using either smaller spots with higher radiant exposures or larger spots with lower radiant exposures. However, at fixed radiant exposure, treatments with smaller spots require a larger duration of surgery but provide a better accuracy for the correction of astigmatism.

10/5/69 (Item 10 from file: 144)

DIALOG(R)File 144:Pascal
(c) 2003 INIST/CNRS. All rts. reserv.

13484119 PASCAL No.: 98-0181611
One-way image transmission through a thick dynamic distorter without a reference beam
ZHANG Jiasen; WANG Huitian; YOSHIKADO Shin; ARUGA Tadashi
Journal: Applied physics letters, 1998-02-09, 72 (6) 630-632
ISSN: 0003-6951 CODEN: APPLAB Availability: INIST-10020
We demonstrated a method to perform one-way image transmission through a dynamic distorter without a reference beam. In this method, a photorefractive four-wave mixing configuration was used to pick up the reconstructed image from the image-bearing signal beam, which acted as an erase beam. The fluctuation period of the dynamic distorter must be much shorter than the response time of the nonlinear material. Reconstructed images with high-fidelity have been obtained. Because use of a reference beam is unnecessary this method is simpler and more effective. (c) 1998 American Institute of Physics.

10/5/70 (Item 11 from file: 144)
DIALOG(R)File 144:Pascal
(c) 2003 INIST/CNRS. All rts. reserv.

12985264 PASCAL No.: 97-0264221
High-accuracy corneal topographer
Optical and imaging techniques for biomonitoring II : Vienna, 9-10 September 1996
ROTTENKOLBER M; PODBIELSKA H
FOTH Hans-Jochen, ed; MARCHESINI Renato, ed; PODBIELSKA Halina, ed
Optical and imaging techniques for biomonitoring. Conference, 2 (Vienna AUT) 1996-09-09
Journal: SPIE proceedings series, 1996, 2927 92-98
ISSN: 1017-2653 Availability: INIST-21760; 354000062507900110
The constant progress in photorefractive surgery requires measurement devices with which the topography of the cornea can be measured with a high precision and bigger reproducibility than the currently used devices offer. The special two-path moire deflectometer is constructed for in vivo measurements. To overcome the problem associated with rapid eye movements, the special unit for measurement of the distance between the eye and the experimental setup, is designed. The achievable resolution of the proposed topographer is in the range of about 3 microns within a lateral measurement range of about 5 mm in diameter. The corresponding precision of the spherical equivalent dioptric number is thus better than 0.015D.

10/5/80 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 2003 The Dialog Corp. All rts. reserv.

08686028 96057406 PMID: 7553119
Automatic eye tracker for excimer laser photorefractive keratectomy.
Gobbi P G; Carones F; Brancato R; Carena M; Fortini A; Scagliotti F; Morico A; Venturi E
Journal of refractive surgery (Thorofare, N.J. : 1995) (UNITED STATES)

May-Jun 1995, 11 (3 Suppl) pS337-42, ISSN 1081-597X Journal Code: 9505927

Acute overlapping of successive laser pulses onto the cornea during photorefractive keratectomy (PRK) is important to avoid refractive distortions. Most excimer laser systems performing corneal ablation lack control of the patient's eye movements and they cannot track the target corneal zone. We developed an eye-tracker based on television monitoring of the pupil and on automatic electro-mechanical deflection of the laser turning mirror, and we applied it to the ExciMed UV200 ArF work station (Summit Technology, Inc., Waltham, Mass.). Basic components are a black and white CCD camera and two fast stepping motors. The circuitry for target discrimination and tracking, and the optical imaging system are designed specifically. The tracker assembly does not interfere with the laser beam path nor with the operator's observation. Tracking of the pupil has been successfully achieved on different color irides, with an accuracy better than 0.1 mm in a 6 x 6 mm2 tracking field. Response time is less than 100 ms. Recordings of eye movements during PRK are presented. Tracking ablations have been performed on moving test eye-balls with plastic corneas. The proposed automatic system appears to be a reliable and effective method for the compensation of patient eye movements appears to be a reliable and effective method during PRK procedures.

10/TI/1 (Item 1 from file: 2)
DIALOG(R)File 2:(c) 2003 Institution of Electrical Engineers. All rts. reserv.

Title: How detrimental is eye movement during photorefractive keratectomy to the patient's post-operative vision?

10/TI/2 (Item 2 from file: 2)
DIALOG(R)File 2:(c) 2003 Institution of Electrical Engineers. All rts. reserv.

Title: Assessment of high and low contrast visual acuity after photorefractive keratectomy for myopia

10/TI/3 (Item 3 from file: 2)
DIALOG(R)File 2:(c) 2003 Institution of Electrical Engineers. All rts. reserv.

Title: Stray light in photorefractive keratectomy for myopia

10/TI/4 (Item 4 from file: 2)
DIALOG(R)File 2:(c) 2003 Institution of Electrical Engineers. All rts. reserv.

Title: Effect of monochromatic aberrations on photorefractive patterns

10/TI/6 (Item 1 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

The effect of excimer laser photorefractive keratectomy for myopia on nerve fiber layer thickness measurements as determined by scanning laser polarimetry.

10/TI/7 (Item 2 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Epithelial removal with the excimer laser (laser-scrape) in photorefractive keratectomy retreatment.

10/TI/8 (Item 3 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Predictability of spherical photorefractive keratectomy for myopia.

10/TI/10 (Item 5 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Myopic photorefractive keratectomy in eyes with atypical inferior corneal steepening.

10/TI/11 (Item 6 from file: 5)

DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Prospective study of New Zealand very low birthweight infants: Outcome at 7-8 years.

10/TI/12 (Item 7 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Glare sensitivity and visual acuity after excimer laser photorefractive keratectomy for myopia.

10/TI/13 (Item 8 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Enlargement of the photorefractive keratectomy optical zone.

10/TI/14 (Item 9 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

An in vivo investigation of the structures responsible for corneal haze after photorefractive keratectomy and their effect on visual function.

10/TI/15 (Item 10 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Quantitation of subepithelial corneal haze after excimer laser photorefractive keratectomy.

10/TI/16 (Item 11 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

The assessment **of** visual **function after** photorefractive **keratectomy with a view to legal requirements for the German Police Service.**

10/TI/17 (Item 12 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

In vivo confocal microscopy of corneal wound healing after excimer laser photorefractive keratectomy.

10/TI/18 (Item 13 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Twenty-four-month follow-up of excimer laser photorefractive keratectomy for myopia: Refractive and visual acuity results.

10/TI/19 (Item 14 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Comparison of excimer laser treatment of astigmatism and myopia.

10/TI/20 (Item 15 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Assessment **of** visual **performance after** photorefractive **keratectomy using a 6 MM ablation zone.**

10/TI/21 (Item 16 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

Excimer laser photorefractive keratectomy for myopia: Clinical results in sighted eyes.

10/TI/22 (Item 17 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

CORNEAL SENSITIVITY AFTER PHOTOREFRACTIVE KERATECTOMY

10/TI/23 (Item 18 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

MEASUREMENT OF VISUAL ACUITY AND REFRACTIVE STATES IN INFANTS

10/TI/24 (Item 19 from file: 5)
DIALOG(R)File 5:(c) 2003 BIOSIS. All rts. reserv.

OWL EYES ACCOMMODATION CORNEAL CURVATURE AND REFRACTIVE STATE

10/TI/25 (Item 1 from file: 8)
DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

Title: Importance of intraocular pressure in glaucoma

10/TI/26 (Item 2 from file: 8)
DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

Title: Motion detection with an optical novelty filter

10/TI/27 (Item 3 from file: 8)
DIALOG(R)File 8:(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

Title: How predictable are the results of excimer laser photorefractive keratectomy? A review

10/TI/28 (Item 1 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Prospective randomized comparison of simultaneous and sequential bilateral photorefractive keratectomy for the correction of myopia

10/TI/29 (Item 2 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Effect of corneal thickness on the accuracy of intraocular pressure measurement in rabbits after excimer laser photoablation

10/TI/30 (Item 3 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Optical coherence tomography evaluation of the corneal cap and stromal bed features after laser in situ keratomileusis for high myopia and astigmatism

10/TI/31 (Item 4 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Cooling effect on excimer laser photorefractive keratectomy

10/TI/32 (Item 5 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Anisocoria after unilateral photorefractive keratectomy - expression of a lesion of the pupillary sphincter muscle?

10/TI/33 (Item 6 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Photofilters for dimensional contrast sensitivity improvement in patients with corneal haze after photorefractive keratectomy

10/TI/34 (Item 7 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Vision screening of preschool children: Evaluating the past, looking toward the future

10/TI/35 (Item 8 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: The efficacy of cooling on excimer laser photorefractive keratectomy in the rabbit eye

10/TI/36 (Item 9 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: A method for examining surface and interface irregularities after photorefractive keratectomy and laser in site keratomileusis: Predictor of optical and functional outcomes

10/TI/37 (Item 10 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Photorefractive keratectomy for pediatric myopic anisometropia

10/TI/38 (Item 11 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Photorefractive keratectomy for residual myopia after radial keratotomy

10/TI/39 (Item 12 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Near vision contrast sensitivity after photorefractive keratectomy

10/TI/40 (Item 13 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: Screening of donor eyes for prior PRK : Evaluation of the Orbscan(TM) and TMS-1(TM) technologies

10/TI/41 (Item 14 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: STRAY LIGHT IN PHOTOREFRACTIVE KERATECTOMY FOR MYOPIA

10/TI/42 (Item 15 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: VISUAL FUNCTION ONE-YEAR AFTER EXCIMER-LASER PHOTOREFRACTIVE KERATECTOMY

10/TI/43 (Item 16 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: 24-MONTH FOLLOW-UP OF EXCIMER-LASER PHOTOREFRACTIVE KERATECTOMY FOR MYOPIA - REFRACTIVE AND VISUAL-ACUITY RESULTS

10/TI/44 (Item 17 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: NEW PROCEDURES FOR EVALUATING VISION FUNCTIONS OF SPECIAL POPULATIONS

10/TI/45 (Item 18 from file: 34)
DIALOG(R)File 34:(c) 2003 Inst for Sci Info. All rts. reserv.

Title: VISUAL FUNCTION FOR THE EVALUATION OF MYOPIC EXCIMER LASER PHOTOREFRACTIVE KERATECTOMY (PRK)

10/TI/46 (Item 1 from file: 35)
DIALOG(R)File 35:(c) 2003 ProQuest Info&Learning. All rts. reserv.

THE ROLE OF VISION IN LANGUAGE LEARNING: RELATIONSHIPS BETWEEN VISUAL ACUITY, LOOKING BEHAVIOR, AND FAST-MAPPING OF NOVEL WORDS ONTO NOVEL

OBJECTS IN CHILDREN WITH MODERATE TO SEVERE DISABILITIES

10/TI/47 (Item 2 from file: 35)
DIALOG(R)File 35:(c) 2003 ProQuest Info&Learning. All rts. reserv.

Corneal shape and visual performance after keratorefractive surgery

10/TI/48 (Item 3 from file: 35)
DIALOG(R)File 35:(c) 2003 ProQuest Info&Learning. All rts. reserv.

EFFECT OF PHOTOREFRACTIVE KERATECTOMY ON THE HUMAN CORNEAL EPITHELIUM (MICROCYSTS)

10/TI/49 (Item 1 from file: 73)
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

New computerized device at near distance for the evaluation of the contrast sensitivity after RK, PRK, LASIK
NUOVO STRUMENTO COMPUTERIZZATO A BREVE DISTANZA PER LA VALUTAZIONE DELLA SENSIBILITA AL CONTRASTO A PROPOSITO DIRK, PRK, LASIK

10/TI/50 (Item 2 from file: 73)
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

Spherical and aspherical photorefractive keratectomy and laser in-situ keratomileusis for moderate to high myopia: Two prospective, randomized clinical trials

10/TI/51 (Item 3 from file: 73)
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

Amethod for examining surface and interface irregularities after photorefractve keratectomy and laser in situ keratomileusis: Predictor of optical and functional outcomes

10/TI/52 (Item 4 from file: 73)
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

The treatment of pain following excimer laser photorefractive keratectomy: Additive effect of local anesthetic drops, topical diclofenac, and bandage soft contact

10/TI/53 (Item 5 from file: 73)
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Myopic regression after photorefractive keratectomy

10/TI/54 (Item 6 from file: 73)
DIALOG(R)File 73:(c) 2003 Elsevier Science B.V. All rts. reserv.

Stereopsis and accommodation following photorefractive keratectomy (PRK) for myopia

10/TI/55 (Item 7 from file: 73)
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Contrast sensitivity following photorefractive keratectomy

10/TI/56 (Item 1 from file: 94)
DIALOG(R)File 94:(c)2003 Japan Science and Tech Corp(JST). All rts. reserv.

Contrast Sensitivity and Glare Disability after Excimer Laser Photorefractive Keratectomy.

10/TI/57 (Item 2 from file: 94)
DIALOG(R)File 94:(c)2003 Japan Science and Tech Corp(JST). All rts. reserv.

The Relationship between Measurements of Refractive Power Changes by Refractometry and Keratometry after Photorefractive Keratectomy.

10/TI/58 (Item 3 from file: 94)
DIALOG(R)File 94:(c)2003 Japan Science and Tech Corp(JST). All rts. reserv.

Centering Accuracy in Photorefractive Keratectomy using the Scanning Type Excimer Laser.

10/TI/59 (Item 4 from file: 94)
DIALOG(R)File 94:(c)2003 Japan Science and Tech Corp(JST). All rts. reserv.

Update of Excimer Laser Refractive Surgery. Excimer Laser Photorefractive Keratectomy for Astigmatism.

10/TI/60 (Item 1 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Functional Outcome and satisfaction after photorefractive keratectomy. Part 2 : Survey of 690 patients

10/TI/61 (Item 2 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Intraocular lens power calculation in eyes after corneal refractive surgery

10/TI/62 (Item 3 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Effect of tear film stability on fluctuation of vision after photorefractive keratectomy

10/TI/63 (Item 4 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Improvement of visual function with glare testing after photorefractive keratectomy and radial keratotomy

10/TI/64 (Item 5 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Entwicklung der Sehschaerfe in der Fruehphase nach photorefraktiver Keratektomie bei Myopie
(Visual acuity in the early course following photorefractive keratectomy for myopia)

10/TI/65 (Item 6 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Etudes des fonctions visuelles mono et binoculaires chez des myopes operes par keratectomie photorefractive
(Evaluation of monocular and binocular visual fonctions in myopic patients)

10/TI/66 (Item 7 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Predictability of spherical photorefractive keratectomy for myopia. Discussion

10/TI/68 (Item 9 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Etude du desequilibre binoculaire occasionne lors de la chirurgie refractive par laser eximer
(Evaluation **of binocular** vision **disturbances after excimer** photorefractive **surgery)**

10/TI/71 (Item 12 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Quantitative measurement of corneal haze after myopic PRK

10/TI/72 (Item 13 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

Night vision testing in unoperated eyes

10/TI/73 (Item 14 from file: 144)
DIALOG(R)File 144:(c) 2003 INIST/CNRS. All rts. reserv.

In vivo confocal microscopy of corneal wound healing after excimer laser photorefractive keratectomy

10/TI/74 (Item 1 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

[Refractive procedures--LASIK and intraocular pressure in myopic eyes]
Refrakcni zakroky--LASIK a nitroocni tlak u myopickych oci.

10/TI/75 (Item 2 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

[Anisocoria after unilateral photorefractive keratectomy. Result of a lesion of the pupillary sphincter muscle?]
Anisokorie nach einseitiger photorefraktiver Keratektomie. Ausdruck einer Lasion des Pupillensphinktermuskels?

10/TI/76 (Item 3 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

Photorefractive keratectomy for residual myopia after radial keratotomy. PRK After RK Study Group.

10/TI/77 (Item 4 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

The changes of tear break up time after myopic excimer laser photorefractive keratectomy.

10/TI/78 (Item 5 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

Retinoscopy after excimer laser photorefractive treatments.

10/TI/79 (Item 6 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

Evaluating vision **after** photorefractive **keratectomy within the scope of legal police service requirement 300]**
Zur Beurteilung des Sehvermogens nach photorefraktiver Keratektomie im Rahmen der Polizeidienstvorschrift 300.

10/TI/81 (Item 8 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

Comparison of excimer laser treatment of astigmatism and myopia. The Excimer Laser and Research Group.

10/TI/82 (Item 9 from file: 155)
DIALOG(R)File 155:(c) format only 2003 The Dialog Corp. All rts. reserv.

Excimer laser photorefractive keratectomy for astigmatism.

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Set     Items   Description
S1    2413667   VISION? OR VISUAL? OR EYE? ?
S2      42395   PHOTOREFRACT? OR PHOTO()REFRACT?
S3   28188913   MEASUR? OR ASSESS? OR QUANTIF? OR QUALIF? OR DETERMIN? OR -
            COMPUT? OR EVALUAT?
S4     238201   S3(3N)S1
S5      43776   S2 OR PRK
S6        703   S5(S)S4
S7        193   S5(5N)S4
S8        175   S7 NOT PY>2000
S9         85   RD (unique items)
S10        85   S9 NOT PY>20001020
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File   2:INSPEC 1969-2003/Feb W4
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         (c) 1998 Inst for Sci Info
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         (c) 2003 Sport Information Resource Centre
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         2002 (c) Action Potential
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         (c) 2003 CAB International
File 164:Allied & Complementary Medicine 1984-2003/Feb
          (c) 2003 BLHCIS
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         (c) 2001 Informania Ltd.
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FTNPL

t s8/3,k/8

8/3,K/8 (Item 2 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01724811 SUPPLIER NUMBER: 19903196 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Corneal topographic evaluation of decentration in photorefractive keratectomy: treatment displacement vs intraoperative drift.
Azar, Dmitri T.; Yeh, Patrick C.
American Journal of Ophthalmology, v124, n3, p312(9)
Sep,
1997
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0002-9394
LANGUAGE: English RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 4117 LINE COUNT: 00364

... larger group of eyes that underwent photorefractive keratectomy between January and June of 1996. All **eyes evaluated** (21 right **eyes** and 27 left eyes) underwent **photorefractive** keratectomy for myopia ranging from -- 1.50 to -- 7.75 diopters. Patients' ages ranged from...low displacement and high drift group did. Therefore, laser drift might be a more important **determinant** of **visual** outcome after **photorefractive** keratectomy. In addition, given that good visual outcome was achieved in decentered treatments with low...

...displacement from intraoperative drift. Our results indicate that laser drift may be a more important **determinant** of postoperative **visual** acuity after **photorefractive** keratectomy than treatment displacement is. Accordingly, when decentration is recognized during photorefractive keratectomy, the accepted...

8/TI/1 (Item 1 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Screening of Myopic Photorefractive **Keratectomy in** Eye **Bank** Eyes **by** Computerized **Videokeratography** (ARTICLE)

8/TI/2 (Item 2 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

AJDC - Effects of Methylphenidate on Sleep in Children With Attention-Deficit Hyperactivity Disorder: An Activity Monitor Study (ABSTRACT)

8/TI/3 (Item 3 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Comparison of Excimer Laser Treatment of Astigmatism and Myopia (ARTICLE)

8/TI/4 (Item 4 from file: 442)
DIALOG(R)File 442:(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.

Ophthalmologists Discuss Methods to Help Physicians See What Patients Can't See (MEDICAL NEWS & PERSPECTIVES)

8/TI/5 (Item 1 from file: 95)
DIALOG(R)File 95:(c) 2003 FIZ TECHNIK. All rts. reserv.

How detrimental is eye movement during photorefractive keratectomy to the patient's post-operative vision?

8/TI/6 (Item 1 from file: 135)
DIALOG(R)File 135:(c) 2003 NewsRx. All rts. reserv.

Screening of Myopic Photorefractive **Keratectomy in** Eye **Bank** Eyes **by** Computerized **Videokeratography."**

8/TI/7 (Item 1 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Visual Performance After Photorefractive Keratectomy With a 6-mm Ablation Zone.

8/TI/9 (Item 3 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Catching your eye . **(** photorefractive **keratectomy** evaluation **)**

8/TI/10 (Item 4 from file: 149)
DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

Corneal light scattering and visual performance in myopic individuals with

spectacles, contact lenses, or excimer laser photorefractive keratectomy.

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Set     Items   Description
S1     163620   VISION? OR VISUAL? OR EYE? ?
S2       1883   PHOTOREFRACT? OR PHOTO()REFRACT?
S3    1185473   MEASUR? OR ASSESS? OR QUANTIF? OR QUALIF? OR DETERMIN? OR -
            COMPUT? OR EVALUAT?
S4      14426   S3(3N)S1
S5         12   S2(5N)S4
S6         10   RD (unique items)
S7         10   S6 NOT PY>2000
S8         10   S7 NOT PD>20001020
? show files
File 441:ESPICOM Pharm&Med DEVICE NEWS 2003/Mar W1
         (c) 2003 ESPICOM Bus.Intell.
File 442:AMA  Journals 1982-2003/Jun B1
         (c)2003 Amer Med Assn -FARS/DARS apply
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         (c) 2003 Reed Business Information Ltd.
File 370:Science 1996-1999/Jul W3
         (c) 1999 AAAS
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Inventor Search in Medline

7/5/1
DIALOG(R)File 155:MEDLINE(R)

13001820 21865199 PMID: 11876329
Calculated impact of higher-order monochromatic aberrations on retinal image quality in a population of human eyes .
Guirao Antonio; Porter Jason; Williams David R; **Cox Ian G**
Journal of the Optical Society of America. A, Optics, image science, and vision (United States) Mar 2002, 19 (3) p620-8, ISSN 1084-7529
Journal Code: 9800943
Contract/Grant No.: EY01319; EY; NEI; EY04367; EY; NEI
Republished from J Opt Soc Am A Opt Image Sci Vis. 2002 Jan;19(1) 1-9; Republished from PMID 11778709
We calculated the impact of higher-order aberrations on retinal image quality and the magnitude of the **visual** benefit expected from their correction in a large population of human **eyes** . Wave aberrations for both **eyes** of 109 normal subjects and 4 keratoconic patients were measured for 3-, 4-, and 5.7-mm pupils with a Shack-Hartmann sensor. Retinal image quality was estimated by means of the modulation transfer function (MTF) in white light. The **visual** benefit was calculated as the ratio of the MTF when the monochromatic higher-order aberrations are corrected to the MTF corresponding to the best correction of defocus and astigmatism. On average, the impact of the higher-order aberrations for a 5.7-mm pupil in normal **eyes** is similar to an equivalent defocus of approximately 0.3 D. The average **visual** benefit for normal **eyes** at 16 c/deg is approximately 2.5 for a 5.7-mm pupil and is negligible for small pupils (1.25 for a 3-mm pupil). The benefit varies greatly among **eyes** , with some normal **eyes** showing almost no benefit and others a benefit higher than 4 at 16 c/deg across a 5.7-mm pupil. The benefit for keratoconic **eyes** is much larger. The benefit at 16 c/deg is 12 and 3 for 5.7- and 3-mm pupils, respectively, averaged across four keratoconics. These theoretical benefits could be realized in normal viewing conditions but only under specific conditions.

7/5/2
DIALOG(R)File 155:MEDLINE(R)

12815365 21636997 PMID: 11778714
Method for optimizing the correction of the eye **'s higher-order aberrations in the presence of decentrations.**
Guirao Antonio; **Cox Ian G** ; Williams David R
Journal of the Optical Society of America. A, Optics, image science, and vision (United States) Jan 2002, 19 (1) p126-8, ISSN 1084-7529
Journal Code: 9800943
Contract/Grant No.: EY01319; EY; NEI; EY04367; EY; NEI
The use of a correcting element to compensate for higher-order aberrations in an optical system often requires accurate alignment of the correcting element. This is not always possible, as in the case of a contact lens on the **eye** . We propose a method consisting of partial correction of every aberration term to minimize the average variance of the residual wave-front aberration produced by Gaussian decentrations (translations and rotations). Analytical expressions to estimate the fraction of every aberration term that should be corrected for a given amount of decentration are derived. To demonstrate the application of this method, three examples are used to compare performance with total and with

partial correction. The partial correction is more robust and always yields some benefit regardless of the amount of decentration.

7/5/3

DIALOG(R)File 155:MEDLINE(R)

11316927 21380674 PMID: 11488483

Monochromatic aberrations of the human eye **in a large population.**

Porter J; Guirao A; **Cox I G** ; Williams D R

Journal of the Optical Society of America. A, Optics, image science, and vision (United States) Aug 2001, 18 (8) p1793-803, ISSN 1084-7529 Journal Code: 9800943

Contract/Grant No.: EY01319; EY; NEI; EY07125; EY; NEI

From both a fundamental and a clinical point of view, it is necessary to know the distribution of the **eye** 's aberrations in the normal population and to be able to describe them as efficiently as possible. We used a modified Hartmann-Shack wave-front sensor to measure the monochromatic wave aberration of both **eyes** for 109 normal human subjects across a 5.7-mm pupil. We analyzed the distribution of the **eye** 's aberrations in the population and found that most Zernike modes are relatively uncorrelated with each other across the population. A principal components analysis was applied to our wave-aberration measurements with the resulting principal components providing only a slightly more compact description of the population data than Zernike modes. This indicates that Zernike modes are efficient basis functions for describing the **eye** 's wave aberration. Even though there appears to be a random variation in the **eye** 's aberrations from subject to subject, many aberrations in the left **eye** were found to be significantly correlated with their counterparts in the right **eye** .

7/5/4

DIALOG(R)File 155:MEDLINE(R)

11204919 21234338 PMID: 11336203

Effect of rotation and translation on the expected benefit of an ideal method to correct the eye **'s higher-order aberrations.**

Guirao A; Williams D R; **Cox I G**

Journal of the Optical Society of America. A, Optics, image science, and vision (United States) May 2001, 18 (5) p1003-15, ISSN 1084-7529 Journal Code: 9800943

Contract/Grant No.: EY01319; EY; NEI; EY04367; EY; NEI

Document type: Journal Article

An ideal correcting method, such as a customized contact lens, laser refractive surgery, or adaptive optics, that corrects higher-order aberrations as well as defocus and astigmatism could improve **vision** . The benefit achieved with this ideal method will be limited by decentration. To estimate the significance of this potential limitation we studied the effect on image quality expected when an ideal correcting method translates or rotates with respect to the **eye** 's pupil. Actual wave aberrations were obtained from ten human **eyes** for a 7.3-mm pupil with a Shack-Hartmann sensor. We computed the residual aberrations that appear as a result of translation or rotation of an otherwise ideal correction. The model is valid for adaptive optics, contact lenses, and phase plates, but it constitutes only a first approximation to the laser refractive surgery case

where tissue removal occurs. Calculations suggest that the typical decentrations will reduce only slightly the optical benefits expected from an ideal correcting method. For typical decentrations the ideal correcting method offers a benefit in modulation 2-4 times higher (1.5-2 times in white light) than with a standard correction of defocus and astigmatism. We obtained analytical expressions that show the impact of translation and rotation on individual Zernike terms. These calculations also reveal which aberrations are most beneficial to correct. We provided practical rules to implement a selective correction depending on the amount of decentration. An experimental study was performed with an aberrated artificial **eye** corrected with an adaptive optics system, validating the theoretical predictions. The results in a keratoconic subject, also corrected with adaptive optics, showed that important benefits are obtained despite decentrations in highly aberrated **eyes** .

7/5/5

10907816 20470550 PMID: 11019871

Visual **benefit of correcting higher order aberrations of the** eye .

Williams D; Yoon G Y; Porter J; Guirao A; Hofer H; **Cox I**

Journal of refractive surgery (Thorofare, N.J. : 1995) (UNITED STATES) Sep-Oct 2000, 16 (5) pS554-9, ISSN 1081-597X Journal Code: 9505927

Contract/Grant No.: EY01319; EY; NEI; EY04367; EY; NEI

There is currently considerable debate concerning the **visual** impact of correcting the higher order aberrations of the **eye** . We describe new measurements of a large population of human **eyes** and compute the **visual** benefit of correcting higher order aberrations. We also describe the increase in contrast sensitivity when higher order aberrations are corrected with an adaptive optics system. All these results suggest that many, though not all, observers with normal **vision** would receive worthwhile improvements in spatial **vision** from customized **vision** correction, at least over a range of viewing distances and particularly when the pupils are large. Keratoconic patients or patients suffering from spherical aberration as a result of laser refractive surgery as it is presently performed would especially benefit. These results encourage the development of methods to correct higher order aberrations. (14 Refs.)

7/5/6

07008574 91320018 PMID: 1650493

Histopathology of childhood pneumonia in developing countries.

Anderson V M; **Turner T**

Reviews of infectious diseases (UNITED STATES) May-Jun 1991, 13 Suppl 6 pS470-6, ISSN 0162-0886 Journal Code: 7905878

Acute lower respiratory infection in children is a major cause of morbidity and mortality in developing countries. Viral and bacterial agents incite characteristic host responses at the level of the bronchi, bronchioles, alveolar walls, and air spaces that correlate with the clinical course. A systematic review of histopathologic features will enhance the understanding of the pathogenetic mechanisms and cofactors that influence the disease process, particularly how tissue injury may be

influenced by nutritional status and access to antibiotics. Research priorities include immunologic assessment, micronutrient assays, and standardized autopsies in developing countries. DNA probes for organisms and immunocytochemical identification of cell markers in tissue promise a new era in microscopic **visualization** of pathogen-host interactions. International collaborative research between ministries of public health and medical universities must be encouraged as a means of providing technical assistance and of advancing new knowledge. Systematic standardized autopsy studies from multiple geographic areas may help define pathologic mechanisms, monitor the natural history of disease, and evaluate interventions in diverse populations. (42 Refs.)

7/5/7

06754558 91064868 PMID: 2249349

Effects of sighting and sensory dominance on monovision high and low contrast visual **acuity.**

Robboy M W; **Cox I G** ; Erickson P

CLAO journal : official publication of the Contact Lens Association of Ophthalmologists, Inc (UNITED STATES) Oct-Dec 1990, 16 (4) p299-301, ISSN 0733-8902 Journal Code: 8302065

We investigated the relationship between ocular dominance and monovision **visual** performance in 15 presbyopic subjects. Ocular dominance was determined using sighting (hole-in-the-card and mirror tests) and sensory (anisometropic blur suppression test) methods. Correcting the dominant sighting **eye** for a given viewing distance was found to be an unreliable method of optimizing blur suppression or binocular high/low contrast **visual** acuity at that distance. If there is any advantage to a particular strategy for selecting the distance monovision **eye** , it must be realized in **vision** performance areas other than **visual** acuity.

7/5/8

06732800 91044181 PMID: 2234826

Soft contact lens-induced longitudinal spherical aberration and its effect on contrast sensitivity.

Cox I ; Holden B A

Optometry and vision science : official publication of the American Academy of Optometry (UNITED STATES) Sep 1990, 67 (9) p679-83, ISSN 1040-5488 Journal Code: 8904931

Some investigators have suggested that the poor quality of **vision** which some spherical, single **vision** , soft lens-wearing patients report may be a result of spherical aberration induced in the ocular system when a soft lens is placed on the **eye** . In this study, the longitudinal spherical aberration of spherical soft lenses, both on and off the **eye** , was calculated using an aspheric corneal model and two-dimensional ray tracing program. Specifically designed front-surface aspheric, soft lenses were produced which demonstrated levels of in-air power variation similar to that calculated for similar-parameter spherically surface lenses. The effect of these lenses on the **visual** performance of nine subjects was assessed by measuring changes in contrast sensitivity and high contrast

visual acuity through 3- and 6-mm artificial pupils. Significant losses of contrast sensitivity were recorded for the spherically aberrated lenses with the 6-mm pupil but not with the 3-mm pupil. High contrast acuity was not affected by any of the aberrated lenses with either the 3- or 6-mm pupils. Theoretical calculations and the contrast sensitivity results indicate that negatively powered lenses produce significantly less spherical aberration in situ than positively powered lenses. Because the majority of the prepresbyopic soft lens-wearing population have low to moderate amounts of myopia, it would appear that soft lens-induced spherical aberration is unlikely to be responsible for the reduction in **visual** performance which some patients report when corrected with single **vision** soft lenses.

7/5/9

DIALOG(R)File 155:MEDLINE(R)

06559709 90259524 PMID: 2342790

Theoretical calculation of the longitudinal spherical aberration of rigid and soft contact lenses.

Cox I

Optometry and vision science : official publication of the American Academy of Optometry (UNITED STATES) Apr 1990, 67 (4) p277-82, ISSN 1040-5488 Journal Code: 8904931

Although previous investigators have attempted to calculate the longitudinal spherical aberration inherent in soft and rigid contact lenses both on and off the **eye** , the use of inappropriate assumptions on which to base their calculations has left the problem unresolved. In this study, the longitudinal spherical aberration of both soft and rigid contact lenses was calculated surface by surface both in air and on the **eye** using a two-dimensional, exact ray tracing program. The erroneous assumptions made by previous investigators were avoided by using an elliptical model for the anterior corneal surface and assuming that the posterior surfaces of soft lenses aligned exactly with the anterior corneal surface after flexure onto the **eye** . The results demonstrated that, with a 6-mm pupil, contact lenses induce significant levels of spherical aberration in the ocular system for soft lenses of back vertex power greater than +3.00 D or -6.00 D and for rigid lenses of powers more positive than -3.00 D. It is suggested that **visual** disturbance due to induced spherical aberration has not been a major clinical problem in the past because these conditions fall outside those experienced by a large proportion of the contact lens-wearing public.

7/5/10

DIALOG(R)File 155:MEDLINE(R)

06176139 89263096 PMID: 2726163

Effect of eye **patching on the overnight corneal swelling response with rigid contact lenses.**

Cox I ; Ames K

Optometry and vision science : official publication of the American Academy of Optometry (UNITED STATES) Apr 1989, 66 (4) p207-8, ISSN 1040-5488 Journal Code: 8904931

In this study, 23 subjects wore a rigid extended wear (EW) lens overnight with a light pressure patch covering the **eye** while 19 subjects wore the

same type of lens without patching. Corneal thickness measurements taken immediately upon awakening showed no significant difference in corneal swelling between the two groups. This result indicates that light pressure patching does not significantly affect the overnight corneal swelling found with rigid EW lenses, and it suggests that lagophthalmos during contact lens wear does not contribute significantly to the oxygen reaching the cornea during the closed- **eye** phase of overnight swelling studies.

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Set     Items   Description
S1         29   E3,E5
S2        223   AU='TURNER T'
S3          6   E25,E28
S4          3   AU='COX IAN G'
S5        261   S1:S4
S6         11   S5 AND (EYE? ? OR VISION? OR VISUAL?)
S7         10   RD (unique items)
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